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ASIAN JOURNAL OF ECONOMICS & SOCIAL STUDIES Vol. 3, No. 1 (1984), 1–18

# DEVELOPMENT THEORY AND THE NEW INTERNATIONAL ECONOMIC ORDER*

SUKHAMOY CHAKRAVARTY

## I

Development is generally defined as growth plus structural change. A theory of development should, therefore, aim to explain both. It is, however, recognized all around that an explanation of structural changes presents a large number of unsolved problems. It is even doubtful whether a credible deductive scheme can be formulated which can explain the usual features that characterize the process of transition from a state of underdevelopment to a state of maturity. Even less ambitious schemes which deal with variations experienced by comparatively stable structures represented by the economies of developed societies run into difficulties which are not insignificant.

The purely growth part of the story is certainly amenable to a more deductive treatment. But growth theory as it has been developed so far has not proved particularly illuminating even in regard to the purely quantitative side of the development process. While some part of this theory is of considerable interest in optimum analysis, the so called descriptive theory of growth cannot throw much light on behaviour outside the "steady states".

What, then, do we mean by development theory in relationship to the new international order? Are there propositions which are suggested by development theory which can help us in delineating the characteristics of the new economic order or throw light on transitional arrangements that can be considered by the international community? It is perhaps legitimate to say that even in the absence of a complete theory, we can hope to say something useful in relation to the new international order provided we have sufficient knowledge of regularities, even though of a somewhat empirical character, which suggest certain concomitant variations as more probable than others. Certain types of proposals may, then, be regarded as more relevant than others.

Very few people would deny that we do possess some knowledge of such regularities. Furthermore, even when we have limited knowledge, we are today in a position to ask questions which growth theory has taught us.

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*Paper presented at Fifth World Congress of International Economic Association, held at Tokyo in 1977. Reproduced by Courtesy of the Macmillan Press Ltd., London.

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Our present state of knowledge would suggest, to begin with, that irrespective of considerable variations in time and space, no cumulative process involving an upward movement in per capita incomes has worked successfully over a significant stretch of time if the socio-economic conditions have not permitted a steady increase in the stock of material and human capital accompanied by substantial increase in knowledge pertaining to the material environment, involving the use of new combinations of existing resources, whether in producing goods which satisfy given wants more efficiently or help in generating new wants.

The statement given above has four major components which need to be separately stressed: (a) sustained increases in capital stock are necessary; (b) increases in capital stock have, by and large, been complementary with growth in knowledge, although in strict theory it need not be so; (c) *periodic* transformations in production processes in the widest sense of the term have been occurring, perhaps to sustain the demand for new capital and (d) finally, economic environment has required the creation of *new wants*, which go beyond the periphery of what is being currently demanded. Our listing of these four fundamental regularities is meant to highlight their importance. We do not imply that they are all equally important in every situation, nor do we suggest that they constitute an exhaustive description. More importantly, we should note that the conditions above do not suggest that the cumulative process has to be necessarily an *equalizing* one. For that to be true, additional conditions will need to be satisfied, which may require further societal adaptations either of a purposive kind or the fortunate presence of some built-in mechanisms which prevent the generation of incremental inequalities. In most situations, it is purposive adaptations which matter.

Growth or development is often treated as a process over time. But historically there has been a spatial dimension as well. Development has generally taken place within a network of interacting spatial entities, with different components growing at characteristically different rates. This immediately suggests that we may have situations where certain component entities decay while others are growing. It, then, becomes an interesting question whether the growing parts are not growing at the expense of the rest. In biology, we have the so-called Lotka-Voltèrra type systems which show that 'predator-prey' relationship can subsist, although they generally exhibit cyclical behaviour when disturbed from equilibrium states. In economics, we do not have exact analogues, although the suggestive power of these models has been noted by several economists.

The problem of interdependence between a system of entities in space as well as in time brings us quite close to the discussion of the *new* international order.

This is because the major intellectual reasons which have led to considerable interest in the subject and make it worthy of serious analysis include, among others, the following propositions: (i) first, the gap between the per capita products of the developed and the less developed countries, howsoever measured, is increasing in absolute and relative terms; (ii) secondly, growing interdependence among various countries at different stages of development has been accompanied by increasing pressures which are currently being felt (or are considered sufficiently imminent) in regard to certain common assets of the globe such as the oceans, environment and certain categories of non-renewable resources; (iii) thirdly, an awareness that a part of the 'widening gap' can only be explained by a process which is akin to 'exploitation', in some sense or other.

There is a widely shared feeling that the existing order understood as a system of formally sovereign nation states interacting primarily through an international market system involving movements of capital, labour and flows of products and services, moderated only to a minimal extent in their functioning by interventions of international agencies cannot be expected to change the 'unequalizing spiral' into an equalizing one, as it would primarily be dominated by the momentum of growth already acquired and the monopolistic advantages that existing levels of development confer in several spheres of economic activity.

Before we go into the facts of the situation as well as into the remedies which are currently being suggested, it is worth while to point out that there may be no need to invoke all three reasons simultaneously to make out a case for the new economic order. One may merely pick up the first reason and argue on the strength of this argument alone that, given the 'rules of the game' the existing order is not likely to lead to any spontaneous changes which will progressively eliminate disparities. However, the exact nature of the remedies that one would suggest would depend on how much weight one attaches to the other two arguments as well.

What is, however, basic to the argument on the new economic order is that (a) the idea of 'equity' is a universal one inasmuch as it includes all existing individuals; (b) so long as individuals are organized in nation states, intermediate levels of decision making may be necessary; and (c) interdependencies among nation states are sufficiently strong so as to make alterations of the 'rules of the game' embodied in the 'international market system' sufficiently important as to rule out 'autarchic' solutions, on the one hand and a system of international 'laissez-faire', on the other. To put the point differently, discussions on the new international order are best considered as attempts at conceptualizing the nature of purposive adaptation of the world economy that may be needed for ensuring equitable and sustainable global development.

## II

On the question of the 'gap', evidence is on the whole very strong, even though quantitative measures can vary depending on what assumptions one makes. We shall cite only two examples. One is a very detailed study by Kuznets on the concept and the measurement of the 'gap' between the 'rich' and the 'poor' countries[1]. Kuznets uses data collected by Hagen and Hawrylshorn from various United Nations sources, uses official exchange rates for expressing gross domestic products of different countries in U.S. dollar terms and makes no adjustment for differences in production boundaries in different countries. His data pertain to the year 1965. By defining developed countries as those with per capita products exceeding $ 1,000 in 1965 plus Japan, and the less developed countries as those with per capita products not exceeding $ 120.00, he finds that the ratio of the average per capita product of the first group was 20 times as high as that of the less developed countries.

Tinbergen, using more recent data, and using various adjustments which purport to reduce 'nominal' income differences to 'real' differences finds a much smaller measure of the 'gap'[2], using the Kuznets-type definition. However, he prefers to work on the basis of the ratio of topmost decile to the lowest decile. His measure of the gap, then, turns out to be 13 to 1. Difference is admittedly a significant one, no matter which system of measurement we use. We may like to know, if the gap is growing over time. According to Kuznets, "a reasonable conjecture is that, in comparison with the quintupling of the per capita product of developed countries over the last century, the per capita product of the 'poor' LDCs rose two-thirds at most; and that this solution would hold roughly even if we were to measure the century back from 1965 (rather than from the mid-1950's)." He puts as his guess that if the relative gap in 1965 was either 20 : 1 or 16 : 1 depending on the definition of the poor, a century ago the ratio would have ranged from 7 : 1 to 5 : 1. As against this evidence of widening gap between the 'rich' and the 'poor' nations collectively, such evidence as exists would appear to suggest that regional income differentials within large sized 'rich' countries has narrowed substantially.[3]

We would, therefore, not be wrong in concluding that the extent of 'polarization' has been increasing, if not between classes, at least amongst nations. This process has gone on even when absolute incomes have nowhere been recorded as having declined substantially on a long-term basis.

Clearly, we have here sufficient evidence of 'unequal growth'. But as this growth has proceeded in a framework where nations have increasingly got together through trade and factor movements, we need to take up the discussion as to whether this unequal growth has not been due to 'exploitation' in some sense or the other. We would also need to enquire whether continued growth at high levels in the developed world would not prejudice the future opportunities to grow of less developed countries.

## III

The expression 'exploitation' is generally regarded as a 'value-loaded' term. It would also appear to suggest that world economic growth is in some sense a zero-sum game, so that the answer to unequal growth can only be found by reversing the roles of two groups of entities.

Those who object to the concept of 'exploitation' usually operate on the basis of a conceptual apparatus which often assumes away the problem of unequal strength in terms of market power, cumulative advantages gained through learning over time, many forms of indivisibilities and numerous external effects. Now as recent advances in economic analysis have made clear these phenomena can be incorporated through suitable extensions of 'traditional' economics but the essential point with these extensions is that while they permit in some sense the retention of the definition of economics as the science of scarcity, the self-equilibrating character of market processes is lost, not to speak of classical optimality properties of the market equilibrium. What is more, in certain situations, the existence of an equilibrium is in doubt.

In so far as development as a process over time has involved some of the above features in an essential way, the more conventional mode of analysis with its more precise set of results would appear to be lacking in explanatory power. Hence, we are faced with a genuine problem which cannot be handled merely by classifying more and more variables as 'exogenous' and by introducing an arbitrary number of shifts in functions as distinguished from movements, logically reversible, along the same set of functions.

Those who recognize that not much is being gained through such procedures may, therefore, react either by adopting a position of 'as if' competitive behaviour, or by turning completely empirical. There are obvious dangers to either approach. In the first case, one may assume away real life problems altogether whereas in the latter case one loses any clear sense of how things are 'connected', even if from the point of view of 'prediction', pure and simple, an empirical approach can often do as well.

In connection with the question as to whether this gap is not being caused by 'exploitation', the first group will dismiss this question as 'noise', as in a purely competitive world, obviously there is no scope for exploitation by definition although there may be inequalities. But these inequalities are caused by accidents of resource endowments or taste. They may also evoke 'technical change' as exogenous events, without feeling the need for incorporating the phenomenon as a part of their system. Their approach to the problem of new economic order will accordingly have its own distinctive character.

As regards the second group they may look for evidence in the 'terms of trade' data, whether these have secularly changed in a manner prejudicial to the less developed countries. More recently, they have tried to assess the impact of transnational corporations in terms of their contributions to host country's gross national product, its balance of payments, internal distribution of incomes, choice of technology, etc. There is considerable likelihood that the second group will come up with recommendations/assessments only on a case-by-case basis, although lacking an overall reference point, they may find it difficult to integrate the proposals into one overall framework.

In sharp contrast, we have the case of Marxist or neo-Marxist authors. In their analytical framework, exploitation is not a value loaded term in the simple sense that exploitation is a bad thing. They would define 'exploitation' with the help of wellknown Marxian categories such as 'value' and 'surplus value'. However, while Marx's observations on foreign trade were essentially in the nature of critical comments on issues such as 'free trade', neither he nor Engels made any systematic attempt to extend the scheme of 'value' analysis to the domain of international trade. This is not to imply that in a broader perspective what Marx had to say about the impact of Western capitalism on non-Western societies organized on pre-capitalist lines was either uninteresting or lacking in insights for understanding the process of global transformation that has been going on from the 16th century onwards. What is meant here is simply that Marx did not try to deduce the laws of exchange of product between different countries in the way Ricardo and Mill did. While this is not the place to go into the reasons underlying Marx's lack of interest in this respect, it is worth pointing out here that by adapting the Marxian scheme of transformation of values into 'prices', A. Emmanuel has precisely attempted what Marx had not done.[4]

As his analysis suggests that developing countries are being exploited by developed countries through the mechanism of adverse changes in terms of trade and as this analysis figures prominently in many recent discussions of international trade written from a radical perspective, we consider it useful to discuss it briefly in this context.[5]

In short, what Emmanuel has done is to depart from Marx in assuming wages to be variable as between different countries where the rates of profit on capital invested are assumed to be equalized by free movement of capital. On these assumptions and the assumption of different compositions of capital, he tries to demonstrate that 'prices of production' will differ from 'values', causing in this instance the result that one unit of labour of the developing countries will exchange for less than one unit of labour of the developed countries. In other words, developing countries will be faced with 'unequal exchange' as they will be paying lower wages while capital earns the same rate of return everywhere.

We do not have the space here to discuss the Marxian transformations problem which is crucial to the argument. Under certain simplifying assumptions, this problem has been shown to be a soluble one. However, not merely are these assumptions quite restrictive in nature, they do not allow in general two separate normalization conditions to be satisfied i.e. 'total prices' cannot equal 'total value' while 'total surplus value' also equals 'total profits'. Furthermore, as 'values' are *not known* to begin with, it is not clear whether correct solution of the transformation problem tells us anything more than the fact that Marx may be shown to be right in strict logic, given a proper set of assumptions. Whether Marxian value theory is useful or not, then, depends on considerations which are altogether different from the use to which Emmanuel puts it.

Finally, we need to say something about his treatment of wages as an independent variable. Here again, it is necessary to distinguish between Emmanuel's treatment and Marx's treatment. It is no doubt true that Marx along with Ricardo looked upon issues pertaining to distribution as in some sense independent of prices. This is also true of Sraffa and the work of contemporary neo-Ricardians. However, unlike Sraffa, Marx did not have any degree of freedom in his system as he assumed the rate of 'surplus value' to be determinable at a point of time as a function of the following three sets of data:

(a) a specified vector of subsistence requirements per worker per day;
(b) an institutionally specified length of the working day;
(c) knowledge relating to the socially necessary labour time needed to produce each commodity entering the worker's consumption basket.

While Marx was well aware that these magnitudes could vary over time or space, this was not the same thing as treating them as 'independent' as Emmanuel has argued. It would appear that Emmanuel's treatment of wages is subject to serious question even from the Marxian parts.

Given the critical nature of the assumption relating to wages along with the specific use that Emmanuel makes of the transformation problem, it would appear that Emmanuel's analysis can at best be regarded as a suggestion for further work, at worst completely unacceptable.[6]

This leads us to the question whether we cannot find evidence of 'exploitation' in the sphere of international economic relationships, using tools and concepts that figure in the literature on imperfect competition. In a well-known article written nearly three decades ago, Singer[7] found strong support for the proposition that underdeveloped countries were being exploited because they concentrated almost exclusively on producing primary commodities with the help of foreign capital for the markets of developed countries.

Singer's analysis was strongly supported by the work that was being done at ECLA under the leadership of Prebisch. The Singer-Prebisch argument has been decidedly influential, if not highly controversial. The argument has two separate components: (a) foreign investment has been foreign only in a geographical sense; (b) the pattern of specialization and exchange has been decidedly adverse from the point of view of developing countries as they have specialized in commodities where the benefits of technical progress tend to be passed on to the consumers in advanced countries, because of differences in market structures. Singer attributes adverse movements in terms of trade to this last factor.

Singer's analysis is unclear from a formal point of view. However, it is possible to give formal explanations which conform to Singer's 'law' relating to terms of trade, based on the sluggish demand for primary products and the need to step up imports of capital goods, etc. from developed countries.[8] We can use the Kalecki distinction between 'cost-determined' and 'demand determined' prices to explain greater cyclical variability of the exports of developing countries.

While it is possible to state conditions under which the 'terms of trade' will go against the developing countries, it has been a moot point whether data do in fact show such a movement. If long term predictions are to be hazarded, one may have to balance the secular operation of Engel's law with the Ricardo-Jevons-Keynes fears of secular diminishing returns from primary production. While the discussion on terms of trade will continue to be debated, it cannot be denied that foreign investment and the production areas it opened has had extremely limited spread effects in most developing countries. Whatever may have been the beneficial effects of this type of trade to the investing countries, and it cannot be denied that there have been some, through cheapening of means of subsistence and through provision of markets, only a very small minority has benefited in the developing countries. As most of the backward and forward linkages of the export sector have been with the developed countries, the multiplier effect of such investment in the Leontief sense has hardly been felt within the developing countries. Furthermore, neither the choice of technology nor the composition of imports has borne any clear relationship to the needs of the economy in terms of its required transformation into a progressive state.

Within sectors such as agriculture, it is the production of commercial crops which generally benefited whereas production of foodgrains stagnated. Development of infrastructure has been usually outer-directed. Simple manufactures of traditional type were often allowed to die out while imports of mass manufactured consumer goods swelled in volume. Above all, while the internal distribution of incomes became more skewed, there was not enough compensating benefit through facilitating a higher ratio of productive accumulation to national income.

Can these facts be cited as evidence of exploitation? It is difficult to give any clear reply, as any such attempt will require the widespread acceptance of a reference case, which can be regarded as embodying the 'no exploitation' situation.[9] It is also necessary to distinguish between a positive 'trade' situation with a situation without 'trade'. Even within the former, it is necessary to distinguish between the 'pure trade' case and the case of 'trade-cum-capital movement'. It is not necessary fortunately to enter into a debate involving the validity of the classical theory of international trade, which 'on its own assumptions' can be regarded as safe from objections That theory, based as it is on an extension of the logic of efficient allocation of resources to situations where the so called 'primary' factors of production can be assumed to be immobile, can be given all the praise that is due.

However, if by assumptions this theory excludes certain typical features which characterize the behaviour of spatially interacting units, then it may be a little academic to debate the virtues of such a theory. It is recognized that features such as increasing returns to scale, indivisibilities, external effects, etc. are powerfully involved in regard to the generation of trade flows, as economists from Smith to Hicks have particularly observed. Could it be the case that these productivity raising aspects of trade have had differential impacts on the welfare levels of developing and developed countries? While 'latent' resources may have been activized by trade and thus helped the less developed countries to a certain extent these have not tended to be cumulative especially in the presence of population growth, whereas in the case of developed economies, these have tended to confer significant nonreversible advantages.

What is more, in certain cases, certain technological changes in the developed countries have had deleterious effects as in the case of development of synthetic substitutes or in the case of displacement of local industries and in a few cases caused disturbances to the ecological system. There have also been cases where nonrenewable resources have been depleted at faster rates and also helped at the same time in destroying the markets for specialized products of less developed countries. Petrochemicals industry is perhaps the most glaring example of this type.

Thus, it can be maintained that in certain situations trade has had certain adverse impacts on growth. However, it is also necessary to point out that in general, it has been a question of distribution of gains. Furthermore, it is also necessary to point out that trade cannot be viewed in isolation from the overall socio-economic environment in which trade takes place. Much more could have been done by many developing countries in capitalizing on the positive aspects of trade while trying to mitigate its adverse effects. It would have required in many cases important institutional changes along with substantial effects at adapting technical know-how, directing resources to a wider spread of education, along with effects at diversifying the structure of production.

In other words, while we are seeking to find out positive steps which need to be taken if the international economic order is to be changed in the direction of greater equity, it is important to bear in mind that spatial interaction involving trade and factor movements can be beneficially altered only if concurrent steps are taken to change the internal 'rules of the game', under which developing countries generally operate, based in part on past experience and partly on the mutations that are currently taking place.[10]

## V

On the basis of the discussion carried out in the last two sections, we are in a position now to take up a discussion of some of the most important issues surrounding the new international economic order.

First of all, we should note briefly what these issues are. Leaving out the questions of outstanding external debt and the future of the international monetary system which will not be dealt with here, the remaining issues can be classified into three *sets* of major issues: (a) restructuring the character of world trade so as to lead to greater diffusion of some of the dynamic benefits associated with trade, besides promoting better use of existing factor endowments; (b) improving the capacity to import of the LDCs on a steady basis through devising commodity agreements of various sorts; (c) creating conditions for maximizing benefits from the operation of transnational corporations, judged by the interest of the developing world. As regards (c), discussion has quite often tended to include all 'host' countries. However, for our purpose, it is the developing countries which are relevant.

The set of proposals under (a) is based on several facts: (a) the low share of developing countries in the total amount of world trade; (b) the low proportion of intra-developing country trade; (c) high concentration on slow growing or stagnant items on the export lists of developing countries; (d) very uneven share of manufactures in the trade of different developing countries; (e) the very large volume of intra-developed country trade along with its (until recently) high rate of growth.

Explanations of these well known and incontrovertible facts have been forthcoming from several sources. However plausible these may be individually, it cannot be denied that they do not add up as yet to a coherent theoretical explanation. Thus, while a fairly plausible classificatory scheme which runs in terms of three categories of products, the 'Ricardo goods', the Heckscher-Ohlin-Samuelson goods and the 'productcycle goods' can throw some light on understanding why trade flows are directionally distinguished in ways mentioned above, it must be admitted that it does not provide by itself with a body of theorems which can help us to predict the consequences of changes in various sets of data.[11] On the other hand, the analytically articulate theory which is often used for comparative statical analysis and on occasions even for dynamic purposes i.e. the Heckscher-Ohlin theory would appear to possess limited explanatory power, even though it cannot be denied that a part of its inability to explain may lie in the use of certain specific policy measures by developed countries which take the form of tariff and nontariff distortions. This is borne out by the fact that the E.E.C. median effective rate of protection on processed materials inclusive of tariffs, variable levies and nontariff barriers amounts to 58.6% followed closely by Japan.[12]

While the above observation would suggest the need for deeper analysis of trade flows and the necessity to evolve a more integrated theoretical frame for giving guidance on comparative advantage, it cannot be denied that greater market access would need to be given a high priority on the list of measures as a part of the new international order especially if export oriented industrialization has to succeed in the less developed countries. There is little doubt that this will call for appropriate adjustment policies in the developed economies. But cyclical and short term difficulties aside, it is difficult to see why such adjustment policies should prove impossible, especially when the direction of long term development would appear to be clear.

The question of generating larger flows of trade amongst the developing countries themselves is generally seen to fall within the area of customs union theory. But it is generally recognized that the conventional theory with its emphasis on 'trade creation *vs* trade diversion' cannot do adequate justice to the scope and complexity of the subject. It has been pointed out repeatedly that the subject is best seen as a part of a theory of regional investment planning and not merely as a part of the subject of tariff unification. While this change of focus in the direction of exploiting the dynamic benefits which may be potentially there makes the question of measurement somewhat difficult using the conventional apparatus of trade theory, suitably formulated planning models can enable one to indicate the magnitude of gains to the union following the introduction of integration schemes. While the question of distribution of gains will remain an open issue, it would appear to be the case that in many situations, the countries collectively stand to gain. Hence the problem may very well be one of working out a compensation scheme if the polarization effect within the union tends to be important.

There are also reasons to think that in this context, trade diversion away from the developed countries cannot be interpreted in the same way as in the classical Vinerian theory.

Given the fact that many developing countries are small in size and also the fact that partly because of size and partly because of resource endowments, they will need to rely on trade and that it is often in the interest of these countries to diversify their trade pattern, the arguments for greater economic integration would seem quite compelling in character.

We can now turn to a discussion of the so called 'commodities' policy which has figured quite prominently in recent discussions. Here, one has to distinguish between several distinct sets of questions. There is the obvious distinction between instability of export prices and that of export earnings. Secondly, there is the question of changing the relative price of the export commodity in real terms by resort to cartelized forms of action. Finally, there is the question, somewhat related to the preceding discussion, of greater processing of raw materials within the less developed countries themselves. So far as the first proposition is concerned, there has been a great deal of discussion bearing on the export instability question. Consensus would appear to favour the proposition that instability is significantly higher. Disputes have ranged as to whether export instability affects growth adversely. There is one group of opinion which would appear to suggest that there is little evidence pointing towards negative correlation between export instability and growth. This is strongly controverted by others. While it is difficult to arrive at a uniformly agreed procedure for an adequate test, it is important to bear two things in mind. First, different countries differ widely in this regard. Secondly, that in this area, attention has to be paid to the question of psychology as well. In other words, if uncertainty in export earnings tends to *inhibit* planning, because of a fear of liquidity crisis, one cannot ignore this factor, even if export evidence may not be able to reflect it.

The real points at issue are whether stability in prices can be achieved at reasonable cost and, secondly, whether such cost can be reduced through an 'integrated programme'. The last point would depend on 'complementarities' amongst different commodities. The UNCTAD studies would seem to indicate that there is evidence of such 'complementarity', which implies some possible savings in costs.

Stability in prices would appear to possess advantage both from the point of view of producing countries as well as from that of the consuming countries.[13] However, in certain situations, this will not result in stabilizing earnings. In that case, supplementary measures may be called for if the maintenance of earnings is what is wanted.

As regards the widespread use of commodity cartels, opinions differ very considerably both as to the feasibility as well as to the desirability of this line of action.[14] It is perhaps more prudent to approach the problem from the point of view of further processing of raw materials rather than from the point of view of maximizing short term monopolistic earnings.

There is one general point that needs to be made regarding the commodities problem. It is the possibility that overly strong preoccupation with the commodity problems, however justified from the point of view of maximizing short term earnings, may divert attention away from the much needed long term structural adaptation of the countries concerned. The other side of the argument is that these exports, especially exports of minerals, frequently contain large rent elements or to put it differently, domestic resource costs are low. Hence, they appear to provide an easy way of increasing the capacity to import in real terms, only if price-output decisions could be altered suitably from the point of view of rent receiving countries.

From the global point of view, there is also the related question of ensuring an intertemporally efficient mode of exploitation of these exhaustible resources which are unevenly distributed from a geographical point of view. Considering the character of the markets for these commodities, very few would be inclined to accept the proposition that proper signals can come only from prices, however 'competitive' markets may be. This may lead some people to recommend global management of these resources. While global planning may be rather distant in coming, some kind of world indicative plans for utilization of these resources may be attempted. It is also possible to indicate the effect of alternative price scenarios on the income growth rates of developed and developing countries.

To put it briefly, both from the point of view of producing as well as from the point of view of consuming countries, commodity agreements may turn out to be a more favourable arrangement, not merely from the short term but also from a long term point of view, than leaving the prices to be determined by the operation of the so called 'market forces'. As different commodities tend to possess very different characteristics, it is often argued that a case-by-case approach is to be preferred here to an 'integrated' approach. While the argument for the former position cannot be dismissed altogether, there would appear to be merit in stabilizing the price of a basket of commodities as these could enable some economy in costs to be reaped.

We may now address ourselves to the question of transnational corporations. The literaure on this question is by now quite substantial, even though it is of a highly variable character. Most sharp differences of opinion are to be found in this area with strong advocates ranged on one side, with those who condemn it in most violent terms, on the other. However, a large part of this discussion has to deal with political and sociological aspects. Important as they are, we cannot deal with these issues here. From the strictly economic point of view, it is first of all necessary to be clear as to the ways in which transnational corporations operate which affect the interests of host and source countries differently from the way private direct investment used to behave in earlier days. Those who find in transnational corporations evidence of a qualitative change in capitalism would naturally tend to think that differences are rather profound. They perceive in this context profound changes in market powers brought about by vast improvements in technology and significant accumulation of capital in a few hands. While there is little doubt that behaviour of these corporations cannot be understood in terms of neoclassical theory of factor movements based on the postulates of competition, it may be recalled that the Hobson-Lenin theory of capital movements was based precisely on the recognition that such capital flows were essential to the functioning of monopoly stage of capitalism. Differences may, however, be found in the fact that while in the earlier context, capital moved mainly to 'primary producing' sectors such as extractive industries, plantations, etc. in the present context, firms may move their production abroad even of manufactured products to take advantage of tariff walls, or cheap source of labour, etc.[15] It is perhaps more in the politically changed atmosphere of host countries that difference is best seen, apart from the question of scale. As regards the last, it may be easy to fall a victim to the optical illusion since all relevant magnitudes have grown very significantly compared with the year 1900.

Transnational corporations, however, raise a few important questions in relation to the present topic that can be raised here. First, what role, if any, can these corporations play in transforming the productive structure of less developed countries? Secondly, if they are found capable of exerting a significant growth promoting effect, can this be combined with policies aimed at better distribution of income? Evidence such as exists today reflects the combined effects of the operation of these corporations and the manner of operation of the governments existing in the host countries. This has naturally led to diametrically opposed sets of conclusions. We cannot, therefore, answer this question on the basis of existing evidence alone. However, it would appear plausible that transnational corporations combine several different functions, an ownership function, a production and management function, marketing function combined in many cases with control of infrastructure in areas such as shipping, banking, insurance, etc. If these functions can be decomposed, then it can be argued that in certain areas related to production and marketing, they may prove to be of help to less developed countries provided the choice of products is appropriate and technology is in some appropriate sense more relevant to the resource endowment of these countries. While the income distribution in many less developed countries is unfavourable from the point of view of encouraging production of basic necessities, it is not legitimate to regard income distribution as an *autonomously* given datum. Transnational corporations tend to increase on the margin dualism, that would have characterized these economies otherwise. Furthermore, from the point of view of foreign exchange earnings of these countries, multinational corporations are said to involve loss of potential earnings through inclusion of export restrictive clauses. In addition, losses inflicted through transfer pricing etc. are frequently involved.[16] Finally, as regards choice of technology, evidence is unclear and it is difficult to be categorical as to whether the dimension of the loss is sizeable or not.[17]

Most economists who have studied the problem carefully would appear to agree that benefits to host countries may be maximized if multinational corporations have to bargain with regional groups, as distinct from individual countries, many of which are small in size. Furthermore, it may be helpful to draw up a plan of development for the country or region in question wherein these corporations are indicated an assigned place. This may eliminate competitive tax concessions, etc. which collectively erode the benefits to the less developed countries. Finally, the question of transfer of technology is much emphasized if the less developed countries have to generate the capability to transform their economies, depending on changing comparative advantage.

Our discussion here has concentrated on the strictly economic side of the question and that too very briefly. But it is perfectly possible to maintain, although not so easy to substantiate, that the problem is essentially a political one. In that case, the choice may lie between outright rejection on the one hand and improvisation of suitable international organizational framework on the other.

If it is the case that for many developing countries, for one reason or another, it is considered difficult to manage certain productive operations efficiently in the complete absence of these corporations, it may still be useful to divorce the 'ownership' function from the 'control' function. Even within the area of control, various types and degrees of control may be distinguished. Under such modified rules of the game, these corporations may from the economic point of view play a useful role in areas of high technology and high capital intensity, especially if they facilitate the transfer of knowhow, not to speak of adaptation of technology.

## VI

We have discussed somewhat briefly some of the major issues figuring in the recent debate on the new international economic order against the general background provided by development theory.

Our analysis would seem to suggest that contrary to thinking in certain circles these issues cannot be dismissed as peripheral in character. Those who do so seem to ignore the fact that growth takes place in *space* as well as in *time*. Furthermore, the purely temporal aspects cannot be divorced entirely from the spatial aspects. Uneven incidence of growth in space tends to produce inhibiting influences which help to perpetuate a state of relatively arrested development. The proposals outlined earlier if they are judiciously implemented may help to mitigate some of the polarizing influences that an international market economy, dominated substantially by market imperfections, etc. tends to produce. Furthermore, unlike national economies, where countervailing forces have been developed which take care at least in part of some of the inefficiencies and inequities of unstable and imperfect markets, no such institutions yet exist on the international sphere of any meaningful dimension whatsoever.

While it is clear that some of these proposals may help in eliminating the disabilities that developing countries suffer from, can they help materially in bridging the gap between rich and poor countries with which our discussion began? After all, the rationale behind the proposals is to reverse a trend which has proved so far irreversible and whose danger from the point of view of global stability cannot be doubted.

Further, while one presses for a greater measure of international equity, one has equally clear to pay attention to intranational equity. While the question of growth with equity is very much in the air, for many developing economies with limited resources and large and growing demographic pressures, the problem of devising an equitable growth strategy is exceedingly complex. The problem basically reduces to one of achieving a rate of capital formation that is high enough to achieve the desired rate of growth if the gap between the rich and the poor nations is to be bridged. At the same time, if the distribution of incomes internally is not to suffer, let alone show an improvement, the question of getting the well-to-do to pay for the costs of growth becomes essential. That this implies many hard decisions which require profound socio-economic adaptations can be easily imagined. According to a recent study by Leontief and his associates,[13] accelerated development in developing regions would require somewhere between 30 and 35 per cent of gross national product for capital investment if the currently widening 'gap' between the rich and the poor is to be narrowed. The figures would appear to be vastly larger than what many developing countries are currently able to invest.

While such a large quantum jump in investment cannot be achieved without utmost domestic austerity what role can the proposals discussed earlier play in this context? It is possible to maintain that the direct impact of these proposals would lie in improving the capacity to import of the developing countries. In so far as accelerated investment is likely to create acute balance of payments problems for many developing countries, these proposals will help in mitigating the so called foreign exchange 'bottleneck'. This implies that the so called structural problem of converting savings into investment will be eased. Even if it is conceded that bottleneck is rarely of such a rigid nature, as to render additional saving abortive, the rate of return on saving is bound to improve. Secondly, by facilitating fuller use of a more abundant factor such as labour, they will help in maximizing incomes. Thirdly, with the adoption of suitable fiscal policies including the use of an appropriate regulatory framework towards transnational corporations, savings especially public savings as a proportion of income are likely to go up. Finally, these measures can lead to a wider diffusion of technological knowledge. While some of this knowledge is of doubtful utility from the point of view of developing countries, in certain productive spheres they are of undoubted significance.

It is quite clear, then, that the different measures discussed here, which do not deal with concessional transfer of financial resources since they raise a different class of issues,[14] are sufficiently important to merit careful consideration by all concerned. However, there is one crucial area of decision making which can make a most profound difference which has not been touched upon here. This relates to the area of production of food crops in less developed countries. In relation to the population growth rate, the rate of growth of food production has been clearly insufficient and even this modest growth has been very unequally distributed. Lagging food production and inadequate distribution raise some of the most important problems relating to growth with equity. While the responsiveness of peasant agriculture to suitable price incentives is a fact beyond question, the problem is far too complex to be handled, simply by moving the internal terms of trade in favour of agriculture. Land augmenting technological change, sustained by appropriate changes in institutions, may provide an answer in many situations. While international action may prove helpful in this connection beginning with research and ending with management of the world food economy, much of the innovation in the widest sense of the term will need to take place on the domestic front of the developing countries.[15]

Related to the question of transformation of agriculture which depends on profound domestic adaptations, there is also the concurrent need to build up human capital which has turned out to be so critical a factor in what Kuznets has described as "modern economic growth."

To sum up, the design of a new international order implies concurrent changes on the national and international fronts. Disabilities from which developing countries suffer have no single remedy as they are the result of multiple factors. Any simple causal model is unlikely to prove adequate to the complexity of the job. The exercise is as yet in a beginning stage. While the nature and magnitude of the required changes is beginning to be somewhat better understood, the analytics of how to steer these changes has received very much less attention. While certain proposals have attracted a lot of attention, they are often seen in isolation. What economics can do, besides providing comprehensive studies of alternative patterns of global development on a suitably disaggregated basis, is to suggest assignment of appropriate instruments of policy to different levels of the decision making process, both nationally as well as internationally.*

## NOTES

1. S. Kuznets, "The gap: Concept, measurement, trends", in G. Ranis (ed.), The Gap Between Rich and Poor Nations, Macmillan, 1972, pp. 3–43.
2. J. Tinbergen, Reshaping the International Order, E. P. Dutton & Co., 1976.
3. J. Tinbergen, op. cit.
4. A. Emmanuel, Unequal Exchange, Monthly Review Press, 1972.
5. S. Amin, Unequal Development, Harvester Press, London, 1976. See also G. K. Helleiner, A World Divided, Cambridge University Press, 1975.
6. We may refer here to the work of neo-Ricardian trade theorists who generally employ a Sraffa-type model for analyzing questions related to gain from trade.
7. H. W. Singer, "The distribution of gains between investing and borrowing count-

*Mr. J. G. Waardenburg made helpful comments on a first draft of the paper.

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8. A model which deduces adverse movements in the terms of trade for the tropics based on productivity of labour in producing food is to be found in Arthur Lewis's Wicksell lectures, "Aspects of tropical trade", 1883–1965, Stockholm, 1969.

9. The use of 'perfect competition' as a reference case was used in neoclassical economics until the early years of this century. However, subsequent critical analysis has taken away much from the optimality property of competitive markets. While Weizsäcker has proposed a new definition of 'exploitation' using the Marxian concept as a starting point, its usefulness in the present context is yet to be demonstrated. See C. C. von Weizsäcker, Modern Capital Theory and the Concept of Exploitation, Kyklos, 1973.

10. Some of these mutations form the basis of the 'dependencia theory' much discussed by the Latin American economists. They also underlie the analysis of functioning of transnational corporations. On dependencia theory, see among others T. Dos Santos, "The structure of dependence", *American Econ. Review*, May 1970.

11. S. Hirsch, "Hypotheses regarding trade between developing and industrial countries", in H. Giersch (ed.), the International Division of Labour, Problems and Perspectives, J.C.B. Mohr, Tübingen, 1974.

12. R. M. Stern, "The accommodations of interests between developed and developing nations", *Journal of World Trade Law*, May 1976.

13. N. Kaldor, "Inflation and recession in the world economy", *Economic Journal*, December 1976.

14. Contributions by M. Radetzki and P. Streeten in Helleiner, *op. cit.*

15. G. K. Helleiner, "Manufactured goods exports and multinational corporations", *Economic Journal*, 1973. The concept of 'sourcing' which forms the basis of Helleiner's argument is found in the writings of Gy. Adams. See Gy. Adams, "Reason for foreign investment", *Acta Oeconomica*, 1974. The argument that multinational corporations combine features of oligopoly with fast technological progress is developed in T. H. Moran, "Foreign expansion as an 'institutional necessity' for U.S. corporate capitalism", *World Politics*, 1972. For a far ranging perspective on the functioning of multinationals including the argument that they represent a mutation in world capitalism, see Stephen Hymer, "The multinational corporation and the law of uneven development", in J. Bhagwati (ed.), Economies and World Order from the 1970s to 1990s, Collier-Macmillan, 1972.

16. C. Vaitsos, Intercountry Income Distribution and Transnational Enterprises, Oxford University Press, 1974.

17. F. Stewart, "Choice of techniques in developing countries", *Journal of Development Studies*, 1972. See also G. K. Helleiner, op. cit.

18. W. Leontief et al., The Future of the World Economy, United Nations, 1976.

19. The case for concessional capital transfer formed the key proposal behind the strategy for Second Development decade. While little progress has been made in reaching the target, objections usually cited do not include questions of principle.

20. H. Linnemann, "Food for a growing population" (mimeo), Amsterdam, 1976. See also S. Chakravarty and M. Guernier, Technical Appendix on 'Food' in Reshaping the International Order (J. Tinbergen, Co-ordinator), E. P. Dutton & Co.

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# FINANCIAL DEVELOPMENT AND THE DEMAND* FOR MONEY IN ASIAN COUNTRIES

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The relation between financial development and the demand for money is empirically examined for nine Asian countries. It is shown that the money demand does not exhibit economies of scale. During the sample period, the expected rate of inflation is a better proxy for the opportunity cost of holding money than the interest rate. It is also empirically shown that the exchange risk is not an important cost factor for floating countries. A credit restraint variable is more significant than the interest rate even for financially developed economy. There is no clear relation between financial development and average adjustment period.

## I. Introduction

Analyzing financial market and seizing its functions accurately is essential to selecting policy instruments and examining their effects in monetary policy. There is an enormous amount of literature concerning the theoretical as well as empirical aspects of the demand for money function.

However, rapid and considerable changes in the structure of the world economy within the last decade or so have various impacts on both developed and developing countries, and give rise to new issues in estimation of the money demand function. For example, high worldwide inflation in

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the 1970s and the move to generalized floating exchange rate system within several major developed countries would have some different and significant effects on economic environment for both developed and developing economies, depending on the stage of financial development of each economy.

The purpose of this paper is, first of all, to reestimate the demand for money function for selected Asian countries in view of such changes in economic environment.[1] Secondly, we examine empirically the scale factor, the opportunity cost factor and/or credit restraint factor in some details, and identify which variable within each factor would best account for the money demand function. We also compare our estimated results with those in the literature. It would be unlikely that the same demand for money function is applicable to all selected Asian countries; it depends on the extent of economic growth and of development of financial structure for each economy. Our main concern, then, is to identify which sort of factors are important as financial market develops.

The organization of the paper is as follows: In the next section II, a general demand for money function is set up, taking each factor affecting the demand for money into greater consideration. Section III is devoted to present empirical results and evaluation.

## II. The Model

The demand for money function in its simplest form can be represented as

$$M/P = f(y_p, r), \quad f_1 > 0, f_2 < 0 \tag{1}$$

where $M$ is the nominal money demand, $P$ the general price level, $y_p$ the permanent real income, and $r$ the opportunity cost of holding money. $f_i$ $(i = 1, 2)$ stands for the partial derivative with respect to the $i$-th variable.

In order to avoid the specification error by implicitly assuming the static expectations, the following partial adjustment process with logarithmically transformed variable is assumed.[2]

$$\ln (M/P)_t - \ln (M/P)_{t-1} = \lambda\{\ln (M^*/P)_t - \ln (M/P)_{t-1}\} \tag{2}$$

where the asterisk denotes the desired value, subscript $t$ the time period, and $\lambda$ $(0 < \lambda \leqslant 1)$ the coefficient of adjustment.

Linearizing equation (1) logarithmically (except $r$) yields $\ln (M/P)_t = a_0 + a_1 \ln y_{pt} + a_2 r_t + u_t$[3], and with this and equation (2), we have

$$\ln (M/P)_t = a_0\lambda + a_1\lambda \ln ny_{pt} + a_2\lambda r_t + (1 - \lambda) \ln (M/P)_{t-1} + \lambda u_t \tag{3}$$

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[1] The selected countries are explained in section III.

[2] In other words, we assume that there is a time period involved for portfolio adjustment.

[3] $u_t$ is the disturbance term at time $t$ with classical properties.

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with the expected sign conditions $a_1 > 0$, and $a_2 < 0$. We specify various equations, using this basic equation, for estimation.

No explanation is necessary for $y_p$ theoretically. However, how to obtain $y_p$ is another problem, and the construction methods are relegated to Appendix B.[4] On the other hand, we have to discuss about the opportunity cost of holding money, $r_t$, in some details.

(*A*) *The Rate of Interest*. In empirical studies for Asian countries, either the short-term or the long-term, or sometimes both are used. Adekunle [1], Biswas [8], Fan and Liu [17], Gujarati [25], and Stadler [40] show that the demand for money is not sensitive to both rates of interest. On the other hand, Bhattacharya [7], Gupta [26], Iman [29], Semudram [38], and Sharma [39] obtain the opposite results. The first three in the latter group, however, used artificially processed data, and only Semudram (for Malaysia) and Sharma (for India) show that the money demand is sensitive to the short-term and the long-term rate of interest, respectively.[5]

(*B*) *The Expected Rate of Interest*. This would also be an opportunity cost of holding money and, therefore, a negative relation would be expected with the money demand, as traditionally argued following Levhari and Patinkin. However, if it is not considered as the opportunity cost, the opposite relation can also be asserted because of "buyer strike" by Bronfenbrenner and Holzman, and uncertainty by Juster and Taylor, or Klein.

If the real rate of interest is relatively stable and the Fisher effect is almost complete, the following equation would be justified.

$$\ln (M/P)_t = a_0\lambda + a_1 \ln y_{pt} + a_2\lambda \ln \dot{p}^e_t + (1-\lambda) \ln (M/P)_{t-1} + \lambda u_t \quad (4)$$

with $a_2 < 0$, where $\dot{p}^e$ is the expected rate of inflation.[6]

(*C*) *The Exchange Risk*. Under the floating exchange rate system, fluctuations of exchange rate have some effects on the money demand through two channels, as discussed by Akhtar and Putnam [4], and Arango and Nadiri [6]. The first, direct effect is through substitution between currencies and financial assets, while the second, indirect effect is through change in volume of trade by exchange rate fluctuations. This exchange risk would not have any effect on the money demand for many developing countries, since they take strict exchange control policies. However, to identify the existence of the exchange risk for countries adopting the floating system, the following equation is postulated for estimation.[7, 8]

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[4] Although only two $y_p$'s are reported here, we tried to construct seven different $y_p$'s, and used them in preliminary experiments (those results are available from the authors on request). It will be observed in section III that a conjecture made by Fan and Liu [17] that the permanent income and GNP would not make any difference is totally wrong.

[5] In fact, poor performances of the rate of interest motivate Wong [43] to consider credit restraint variables discussed later.

[6] The hypothesis $a_2 < 0$ implicitly assumes that the expected rate of inflation is an opportunity cost of holding money. For construction of $\dot{p}^e$, see Appendix B.

$$\ln (M/P)_t = a_0\lambda + a_1\lambda \ln y_{pt} + a_2\lambda r_t + a_3\lambda(\Delta s_t/s_{t-1}) + (1-\lambda)\ln (M/P)_{t-1} + \lambda u_t \qquad (5)$$

with $a_3 < 0$, where $s$ stands for the spot exchange rate.[9]

(*D*) *Credit Restraint.* This is another factor of opportuuity cost of holding money, but a much broader concept than the rate of interest. Even if the rate of interest cannot be an appropriate variable to represent the opportunity cost, for some reason such as the fact that it is sometimes unobservable, there would be some other credit restraints that appropriately reflect the opportunity costs.[10] The credit restraints are of particular importance for developing countries where financial markets are undeveloped and the market integration is in its infancy.[11] Wong [43] specifies many such variables and performs statistical tests in the money demand function for five selected Asian developing countries.[12] It was shown in Wong [43] that some credit restraint variables have some explanatory power, but in general, they would depend on economic environment and the stage of financial development for each country. Expressing the $i$-th such variable by $c_i$, the estimation equation can be specified as

$$\ln (M/P)_t = a_0\lambda + a_1\lambda \ln y_{pt} + a_2\lambda c_{it} + (1-\lambda)\ln (M/P)_{t-1} + \lambda u_t \qquad (6)$$

with the expected sign condition $a_2 < 0$.

This completes the construction of our estimation model. These equations are estimated for selected Asian countries and the estimated results are reported in the next section.

## III. The Estimation and Evaluation[13]

For mainly the sake of comparison, the selected Asian countries for

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[7] For four countries out of the total nine countries under empirical investigation adopt the floating system. For explanation of exchange rate system and for sample data, see the next section III.

[8] Equation (5) is specified with an additional assumption that the opportunity costs represented by $r$ (the interest rate) and by change in the exchange rate are different.

[9] Akhtar and Putnam [4] use the standard deviation of change in the spot exchange rate, while Arango and Nadiri [6] use the expected exchange rate.

[10] Since credit restraint variables would reflect the rate of interest, they serve as proxy variables for the opportunity costs when the rate of interest is inoperative.

[11] For extensive study of unorganized financial markets in developing countries, see Ghatak [23], and Wai [41], [42].

[12] Credit restraint variables examined by Wong [43] are (1) the discount rate, (2) the ratio of the expected deposit to the actual total deposit, (3) the ratio of the net domestic credit to GNP, (4) one minus the third variable, (5) the change in net domestic credit, (6) the rate of change of the third variable, (7) the ratio of reserve money to net domestic credit of banks, (8) the rate of change of the seventh variable, (9) change in bank debits, and (10) the ratio of bank debits to GNP.

[13] Estimation results of many preliminary experiments that are not reported here due to space limitation will be available from the authors on request.

estimation are nine that are the same as in Fan and Liu [17], i.e., Japan, Taiwan, Korea, India, Pakistan, Burma, Sri Lanka, Philippines, and Thailand. The estimation period covers the floating exchange rate period,[14] from the first quarter of 1973 to the fourth quarter of 1981.[15] According to the traditional classification, these sample countries are classified as (1) high income and developed—Japan, (2-a) middle income and NICs—Korea, Taiwan, and Phillipines, (2-b) middle income and primary producing—Thailand, (3-a) low income and primary producing--Sri Lanka and Burma, and (3-b) low income and densely populated—India and Pakistan.

The specific purposes of our present estimations can be reiterated and clarified, in view of the sample data, as follows: First of all, since it is well known that the demand for money, *ceteris paribus*, exhibits economies of scale, it is of some interest to observe if there is a tendency that high income countries have lower permanent income elasticities than lower income countries.

Secondly, if financial development is roughly parallel to the growth of income level in monetary economy, it would be unlikely that the demand for money in high income countries is sensitive to credit restraint variables, since the rate of interest reflects most of the relevant information efficiently. In particular, the interest elasticity would be significantly greater than the elasticity of credit restraint variables in absolute value for high income, and hence financially developed, countries.

Thirdly, since the exchange rate systems are different in three broad categories, i.e., floating, pegged to a specific currency, and pegged to a composite of currencies (or SDR), it is interesting to examine statistically if there is an exchange risk as another opportunity cost factor of holding money.

Finally, it can be argued that AAP (average adjustment period), defined as $(1 - \lambda)/\lambda$, would have a tendency to be small (adjustment speed is slow) for economies with developed financial market, since it takes some time for portfolio adjustment in such economies. However, for economies with less developed financial market, AAP would be relatively large (adjustment speed is high), since the choice between goods and money is more important than portfolio adjustment for low income economies.

Table I summarizes the estimated results for our basic equation (3).[16]

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[14] The exchange rate systems adopted by the nine countries are (1) float: Japan, Phillipines, Sri Lanka, and India, (2) pegged to U.S. Dollar: Korea, Pakistan and Taiwan, (3) pegged to a composite of currencies: Thailand, and (4) pegged to SDR: Burma. See, e.g. The IMF Annual Report (1980).

[15] Due to the data availability, the end point is 1979:IV for Taiwan, and 1980:IV for Burma. For data sources, see Appendix A.

[16] Burma is neglected since the rate of interest data were not available to us.

TABLE I (a), (b)

$$\ln\left(\frac{M}{P}\right)_t = \lambda a_0 + \lambda a_1 \ln y_{pt} + \lambda a_2 r_t + (1-\lambda)\ln\left(\frac{M}{P}\right)_{t-1} + \lambda u_t$$

| Country | M/P (c) | $\lambda a_0$ | $\lambda a_1$ | $\lambda a_2$ | $(1-\lambda)$ | $\bar{R}^2$ | $D-W$ (d)<br>$h$ (e) | $y_P$ (f) | $r$ (g) | Estimation technique |
|---|---|---|---|---|---|---|---|---|---|---|
| Japan | $M_2$/WPI | −6.772**<br>(−9.288) | 0.672**<br>(9.473) | −0.043**<br>(−5.053) | 0.196**<br>(2.617) | 0.994 | 1.813<br>0.551 | $y_{P2}$ | $r_C$ | GLS |
| Korea | $M_2$/CPI | 0.298**<br>(4.484) | 0.635**<br>(7.192) | −0.0072**<br>(−2.692) | 0.215**<br>(1.846) | 0.962 | 2.032<br>0.104 | $y_{P1}$ | $r_D$ | GLS |
| Taiwan | $M_2$/CPI | −0.960**<br>(−2.711) | 1.152**<br>(3.997) | −0.196**<br>(−2.518) | 0.311**<br>(2.063) | 0.983 | 1.933<br>0.212 | $y_{P1}$ | $r_C$ | GLS |
| India | $M_1$/CPI | −0.526*<br>(−1.491) | 0.387**<br>(2.292) | −0.0164<br>(−0.392) | 0.495**<br>(3.203) | 0.712 | 2.019<br>−0 094 | $y_{P1}$ | $r_B$ | OLS |
| Thailand | $M_2$/CPI | −7.845**<br>(−4.391) | 0.372**<br>(3.528) | 0.115**<br>(2.663) | 0.050<br>(0.301) | 0.407 | 1.851<br>0.570 | $y_{P1}$ | $r_D$ | OLS |
| Pakistan | $M_2$/WPI | −1.110**<br>(−6.272) | 0.795**<br>(6.273) | −0.0001<br>(−0.014) | 0.078<br>(0.539) | 0.978 | 1.992<br>0.035 | $y_{P1}$ | $r_C$ | GLS |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sri Lanka | $M_1/CPI$ | −3.827**<br>(−2.667) | 0.610**<br>(2.762) | −0.026**<br>(−1.887) | 0.785**<br>(6.282) | 0.934 | 1.853<br>0.537 | $y_{P1}$ | $r_{AD}$ | OLS |
| Philippines | $M_1/CPI$ | −2.526**<br>(−3.551) | 0.330**<br>(2.832) | 0.0015*<br>(1.651) | 0.175<br>(0.778) | 0.752 | 1.756<br>— | $y_{P2}$ | $c_{PP}$ | OLS |

Remarks: (a) $t$-statistics in parenthesis, * = significant at 10% level, ** = significant at 5% level, (b) Sample period; 1973 : I–1981 : IV (for Taiwan, 1973 : I–1979 : IV). (c) WPI = Wholesale Price Index, CPI = Consumers' Price Index, $M_1$ = currency plus demand deposits, $M_2$ = $M_1$ plus time and savings deposits, (d) Durbin-Watson statistics, (e) Durbin's $h$ statistics (unable to calculate if estimated variance of disturbance exceeds the inverse of number of observation), (f) Permanent income (see Appendix B), (g) The interest rate: $r_{AD}$ = advanced rate, $r_B$ = bond rate, $r_C$ = call rate, $r_D$ = discount rate, $c_{PP}$ = commercial paper price.

## TABLE II(a)

## SHORT-RUN AND LONG-RUN ELASTICITIES, AND THE AVERAGE ADJUSTMENT PERIOD

| Country | $\eta_{yp_S}$ (b) | $\eta_{yp_L}$ | $\eta_{r_S}$ | $\eta_{r_L}$ | AAP (c) |
|---|---|---|---|---|---|
| Japan | 0.672 | 0.835 | −0.0005 | −0.0006 | 0.243 |
| Korea | 0.635 | 0.809 | −0.0005 | −0.0006 | 0.273 |
| Taiwan | 1.152 | 1.637 | −0.0023 | −0.0033 | 0.452 |
| India | 0.387 | 0.767 | −0.0011 | −0.0022 | 0.981 |
| Thailand | 0.372 | 0.392 | 0.013 | 0.014 | 0.053 |
| Pakistan | 0.795 | 0.862 | −0.0000 | −0.0000 | 0.084 |
| Sri Lanka | 0.610 | 2.837 | −0.0024 | −0.011 | 3.651 |
| Philippines | 0.330 | 0.400 | 0.0015 (d) | 0.0018 (d) | 0.213 |

Remarks: (a) Calculated from Table I, (b) $\eta_{yp}$ = elasticity with respect to permanent income, $\eta_r$ = elasticity with respect to the interest rate, suffix $S$ and $L$ signify short-run and long-run, respectively, (c) AAP = $(1-\lambda)/\lambda$ = average adjustment period, (d) commercial paper price is used as a proxy for the interest rate.

All parameters satisfy the sign condition,[17] and only two of the interest rate coefficients are insignificant. The corresponding elasticities, both short-run and long-run, are calculated and summarized in Table II.

Our results are in keen contrast with those obtained by Fan and Liu [17], summarized in Table III, where many income coefficients are insignificant and most of interest coefficients do not even satisfy the sign condition.

The effect of the expected rate of inflation as an opportunity cost of holding money is estimated and reported in Table IV. The sign condition is satisfied except Thailand, and Pakistan and Thailand are only two that do not have significant coefficient. The overall performance is even marginally better than the case reported in Table I. The corresponding elasticities are calculated and presented in Table V. Compared with those in Table II, it can be concluded that the demand for money is much more sensitive to the expected rate of inflation than to the rate of interest for our sample period. This result is what we have expected, since the sample period includes two oil crises and subsequent worldwide inflation period.

The effect of the exchange risk as an opportunity cost of holding (domestic) money is also estimated and the results are reported in Table VI. Out of four countries that adopt the floating exchange rate system, India and Philippines satisfy the sign condition. However, India is only one country that has a significant negative coefficient. For all other cases, the coefficients do not satisfy the sign condition or are insignificant. The corresponding elasticities are reported in Table VII.[18]

For credit restraint variables, an extensive study by Wong [43] reveals that only the ratio of domestic credit to GNP and its variant are significant for Korea, Philippines, Sri Lanka, Taiwan, and Thailand, which are in middle and low income countries. Then, we are interested how such variables affect the money demand in high income economy with developed financial market, Japan, where the rate of interest is supposed to reflect the opportunity cost of holding money appropriately. We tried four such variables that are suggested by Wong and are available for quarterly basis, but only one of them, i.e., the ratio of bank debits to income, is statistically significant and, therefore, reported in Table VIII.[19] It is rather surprising that the credit restraint shows correct sign and is statistically significant, and the elasticities, reported in Table IX, are greater than the interest elasticities (Table II) in absolute value. Since the bank debits represent the amount of withdrawal from the demand deposit accounts, the significance of the credit restraint variable implies that, as bank credit becomes tighter,

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[17] $a_2\lambda$ in Philippines should be positive since the commercial paper price is used as a proxy for the interest rate.

[18] Since the rate of change in exchange rate is not logarithmically transformed, the elasticity is evaluated at its sample mean. If the sample mean is negative (for example, Japan and Pakistan), the elasticity has an opposite sign to the coefficient.

## TABLE III
## COMPARISON

| | Country | Sample period | M | Regressor (a) | Elasticity $\eta$ (b) | | | | $\bar{R}^2$ | Data |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | $\eta_{y_S}$ | $\eta_{y_L}$ | $\eta_{r_S}$ | $\eta_{r_L}$ | | |
| Fan and Liu [17] | Japan | 1953–1958 | M (c) | $r_D$, GNP, $M_{t-1}$ | 0.496 | 1.064 | −0.013* | −0.028* | 0.997 | annual |
| | Korea | ,, | ,, | ,, | 0.236* | 0.563* | 0.227* | 0.542* | 0.983 | ,, |
| | Taiwan | ,, | ,, | ,, | 0.462 | 0.945 | −0.564 | −1.153 | 0.997 | ,, |
| | India | ,, | ,, | ,, | −0.020* | (d) | −0.012* | (d) | 0.994 | ,, |
| | Thailand | ,, | ,, | ,, | 0.601 | 0.797 | −0.009* | −0.012* | 0.989 | ,, |
| | Pakistan | ,, | ,, | ,, | 0.021* | 1.40* | 0.009* | 0.6* | 0.974 | ,, |
| | Sri Lanka | ,, | ,, | ,, | 0.420 | 0.718 | 0.209 | 0.357 | 0.977 | ,, |
| | Philippines | ,, | ,, | ,, | 1.146 | (e) | 0.067 | (e) | 0.990 | ,, |
| Gujarati [25] | India | 1948–1965 | $M_1$ | $r_B$, GNP, $M_{t-1}$ | 0.687 | 1.456 | −0.102* | −0.216* | 0.923 | ,, |
| Iman [29] | Pakistan | 1955–1966 | $M_1$ | $r_T$, GNP, $M_{t-1}$ | 0.0921 | 0.294 | −14.32 (f) | −45.75 (f) | 0.790 | ,, |
| Sharma [39] | India | 1951/I–1967/IV | $M_1$ | $r_B$, $y_P$, $M_{t-1}$ | 0.765 (g) | 1.50 (g) | −0.340 | −0.667 | 0.827 | quarterly |
| Aghevri, Khan, Narveker, and Short [3] (i) | Sri Lanka | 1957/II–1976/IV | $M_1$ | Pt-1, GNP, $M_{t-1}$ | 0.082 | 1.079 | −1.277 | −16.80 | 0.960 | ,, |
| | ,, | ,, | $M_2$ | ,, | 0.087 | 1.475 | −1.326 | −22.47 | 0.987 | ,, |
| | Philippines | ,, | $M_1$ | ,, | 0.220 | 0.853 | −0.901 | −3.492 | 0.974 | ,, |
| | ,, | ,, | $M_2$ | ,, | 0.083 | 1.537 | −0.969 | −17.94 | 0.993 | ,, |
| | Thailand | ,, | $M_1$ | ,, | 0.227 | 0.680 | −0.893 | −2.674 | 0.974 | ,, |
| | ,, | ,, | $M_2$ | ,, | 0.300 | 1.485 | −1.024 | −5.069 | 0.997 | ,, |

Remarks: (a) $r_D$ = discount rate, $r_B$ = bond rate, $r_T$ = weighted average of deposit rates, $M_{t-1} = M$ in the previous period, (b) $\eta_{r_i}$ = the long-run elasticities are our calculations, (c) No explanation is given about the definition of M in Fan and Liu [17], (d) Unable to calculate since the adjustment coefficient $\lambda > 1$, (e) Unable to calculate since the adjustment coefficient $\lambda < 0$, (f) Semi-elasticity, since the interest rate is not transformed logarithmically, (g) Elasticity with respect to the permanent income, (h) Using annual data (1951–1972) in the same equation, $\eta_{yp_L} = 1.55$ and $\eta_{r_L} = -0.61$, (i) $\eta_{r_i}$ is the elasticity with respect to the (expected) rate of inflation, * = not significant at 5% level.

TABLE IV (a), (b)

$$\ln\left(\frac{M}{P}\right)_t = \lambda a_0 + \lambda a_1 \ln y_{pt} + \lambda a_2 \ln \dot{p}_t^e + (1-\lambda)\ln\left(\frac{M}{P}\right)_{t-1} + \lambda u_t$$

| Country | M/P (c) | $\lambda a_0$ | $\lambda a_1$ | $\lambda a_2$ | $(1-\lambda)$ | $\bar{R}^2$ | $D-W$ (d)<br>$h$ (e) | $y_P$ (f) | estimation technique |
|---|---|---|---|---|---|---|---|---|---|
| Japan (g) | $M_2$/CPI | −4.111**<br>(−2.632) | 0.390**<br>(2.680) | −0.857**<br>(−2.527) | 0.496**<br>(2.958) | 0.989 | 1.834<br>−1.036 | $y_{P1}$ | GLS |
| Korea | $M_2$/WPI | 0.316**<br>(4.051) | 0.555**<br>(4.649) | −0.631**<br>(−2.309) | 0.288**<br>(1.946) | 0.963 | 1.865<br>0.600 | $y_{P2}$ | GLS |
| Taiwan | $M_2$/WPI | −1.212**<br>(−2.896) | 0.694**<br>(3.116) | −1.721**<br>(−3.324) | 0.632**<br>(5.087) | 0.994 | 1.769<br>0.643 | $y_{P2}$ | GLS |
| India | $M_2$/WPI | −0.465*<br>(−1.520) | 0.261*<br>(1.693) | −0.695*<br>(−1.410) | 0.905**<br>(11.058) | 0.944 | 1.975<br>0.075 | $y_{P2}$ | GLS |
| Thailand | $M_2$/WPI | −6.564**<br>(−3.425) | 0.370**<br>(3.160) | 5.866<br>(1.208) | 0.171<br>(0.963) | 0.280 | 1.980<br>0 184 | $y_{P2}$ | OLS |
| Pakistan | $M_2$/CPI | −1.003**<br>(−4.668) | 0.804**<br>(4.739) | −0.154<br>(−0.385) | 0.051<br>(0.267) | 0.975 | 1.733<br>— | $y_{P1}$ | OLS |
| Sri Lanka | $M_1$/CPI | −2.102*<br>(−1.552) | 0.298*<br>(1.688) | −1.424**<br>(−2.463) | 0.845**<br>(6.700) | 0.939 | 1.936<br>0.236 | $y_{P1}$ | GLS |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Philippines | $M_2$/CPI | −0.879**<br>(−3.221) | 0.611**<br>(3.428) | −0.734*<br>(−1.400) | 0.646**<br>(2.923) | 0.957 | $\frac{1.822}{—}$ | $y_{P1}$ | OLS |
| Burma | $M_1$/WPI | −3.696**<br>(−2.770) | 0.362**<br>(2.706) | −0.520*<br>(−1.551) | 0.457**<br>(2.380) | 0.932 | $\frac{1.674}{2.947}$ | $y_{P2}$ | OLS |

Remarks: See Table I for (a), (c), (d), (e), (f).
(b) Same as in Table I, except Burma (1973 : I–1980 : IV)
(g) A significant result is also obtained using WPI (by GLS)

$$\ln\left(\frac{M}{P}\right)_t = \underset{(-2.556)}{-4.0028^{**}} + \underset{(2.584)}{0.442^{**}} \ln y_{pt} \underset{(-2.140)}{-0.557^{**}} \ln \dot{p}^e_t + \underset{(2.623)}{0.494^{**}} \ln\left(\frac{M}{P}\right)_{t-1}$$

$$(p = \text{WPI}, y_P = y_{P2}),\ \bar{R}^2 = 0.988,\ D - W = 2.096$$

## TABLE V (a)

## SHORT-RUN AND LONG-RUN ELASTICITIES, AND THE AVERAGE ADJUSTMENT PERIOD

| Country | $\eta_{y_{PS}}$ | $\eta_{y_{PL}}$ | $\eta_{\dot{p}^e_S}$ | $\eta_{\dot{p}^e_L}$ | AAP (b) |
|---|---|---|---|---|---|
| Japan | 0.390 | 0.774 | −0.857 | −1.700 | 0.983 |
| Korea | 0.555 | 0.779 | −0.631 | −0.886 | 0.404 |
| Taiwan | 0.694 | 1.855 | −1.721 | −4.677 | 1.718 |
| India | 0.261 | 2.744 | −0.695 | −7.298 | 9.508 |
| Thailand | 0.370 | 0.478 | 5.866 | 7.073 | 0.206 |
| Pakistan | 0.804 | 0.847 | −0.154 | −0.163 | 0.054 |
| Sri Lanka | 0.298 | 1.924 | −1.424 | −9.181 | 5.448 |
| Philippines | 0.611 | 1.723 | −0.734 | −2.071 | 1.823 |
| Burma | 0.362 | 0.667 | −0.520 | −0.959 | 0.843 |

Remarks: (a) Calculated from Table IV, (b) AAP = $(1 - \lambda)/\lambda$

### TABLE VI (a), (b)

$$\ln\left(\frac{M}{P}\right)_t = \lambda a_0 + \lambda a_1 \ln y_{pt} + \lambda a_2 r_t + \lambda a_3\left(\frac{\Delta s_t}{s_{t-1}}\right) + (1-\lambda)\ln\left(\frac{M}{P}\right)_{t-1} + \lambda u_t$$

| Country | M/P (c) | $\lambda a_0$ | $\lambda a_1$ | $\lambda a_2$ | $\lambda a_3$ | $(1-\lambda)$ | $\bar{R}^2$ | $D-W$ (d) / $h$ (e) | $y_P$ (f) | $r$ (g) | estimation technique |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Japan | $M_2$/WPI | −8.564** | 0.702** | −0.010** | 0.185** | 0.150** | 0.997 | 1.516 | $y_{P2}$ | $r_B$ | GLS |
| | | (−11.018) | (11.383) | (−6.894) | (3.884) | (2.279) | | 1.395 | | | |
| Korea | $M_2$/CPI | 0.315** | 0.621** | −0.0078** | 0.034 | 0.229** | 0.963 | 2.045 | $y_{P1}$ | $r_D$ | GLS |
| | | (−4.42) | (6.629) | (−2.399) | (0.289) | (1.904) | | 0.186 | | | |
| Taiwan | $M_2$/CPI | −0.903** | 1.123** | −0.0194** | 0.240 | 0.323** | 0.981 | 1.900 | $y_{P1}$ | $r_C$ | GLS |
| | | (−2.351) | (3.495) | (−2.394) | (0.512) | (1.955) | | 0.349 | | | |
| India | $M_1$/WPI | −0.497* | 0.368** | −0.0107 | −0.820* | 0.391** | 0.599 | 2.001 | $y_{P2}$ | $r_B$ | OLS |
| | | (−1.342) | (2.084) | (−0.271) | (−1.554) | (2.483) | | −0.0041 | | | |
| Thailand | $M_2$/WPI | −7.907** | 0.376** | 0.115** | −0.925 | 0.053 | 0.386 | 1.814 | $y_{P2}$ | $r_D$ | OLS |
| | | (−4.335) | (3.490) | (2.611) | (−0.400) | (0.312) | | 1.22 | | | |
| Pakistan | $M_2$/WPI | −1.064** | 0.772** | −0.0004 | 0.244 | 0.094 | 0.977 | 2.074 | $y_{P2}$ | $r_C$ | OLS |
| | | (−6.035) | (6.132) | (−0.074) | (1.080) | (0.651) | | −0.317 | | | |
| Sri Lanka | $M_1$/CPI | −3.857** | 0.614** | −0.026** | 0.041 | 0.783** | 0.933 | 1.931 | $y_{P1}$ | $r_{AD}$ | OLS |
| | | (−2.653) | (2.746) | (−1.881) | (0.625) | (6.186) | | 0.254 | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Philippines | $M_2$/CPI | −2.693**<br>(−3.383) | 0.346**<br>(2.822) | 0.0017<br>(1.692) | −0.199<br>(−0.498) | 0.125<br>(0.499) | 0.744 | $\frac{1.675}{—}$ | $y_{P1}$ | $c_{PP}$ | OLS |
| Burma | $M_1$/WPI | −5.417**<br>(−6.504) | 0.546<br>(6.578) | (h) | 0.467**<br>(2.681) | 0.234**<br>(1.892) | 0.943 | $\frac{1.871}{0.412}$ | $y_{P2}$ | (h) | OLS |

Remarks: See Table I for (a), (c), (d), (e), (f), and (g).
(b) The sample period is the same as in Table I except Burma (1973 : I–1980 : IV).
(h) The interest rate is unavailable.

## TABLE VII (a)

## SHORT-RUN AND LONG-RUN ELASTICITIES, AND THE AVERAGE ADJUSTMENT PERIOD

| Country | $\eta_{y_{PS}}$ | $\eta_{y_{PL}}$ | $\eta_{r_S}$ | $\eta_{r_L}$ | $\eta_{\Delta s_S}$ (b) | $\eta_{\Delta s_L}$ (b) | AAP (c) |
|---|---|---|---|---|---|---|---|
| Japan | 0.702 | 0.826 | −0.0014 | −0.0017 | −0.0035 | −0.0041 | 0.177 |
| Korea | 0.621 | 0.806 | −0.0005 | −0.0007 | 0.0000 | 0.0000 | 0.298 |
| Taiwan | 1.123 | 1.659 | −0.0023 | −0.0034 | 0.0003 | 0.0004 | 0.477 |
| India | 0.368 | 0.6051 | −0.0007 | −0.0011 | −0.0031 | −0.0051 | 0.643 |
| Thailand | 0.376 | 0.397 | 0.013 | 0.014 | −0.0037 | −0.0039 | 0.0056 |
| Pakistan | 0.772 | 0.852 | −0.0004 | −0.0005 | −0.0001 | −0.0001 | 0.104 |
| Sri Lanka | 0.614 | 2.829 | −0.0024 | −0.011 | 0.002 | 0.008 | 3.606 |
| Philippines | 0.346 | 0.395 | 0.0017 (d) | 0.0019 (d) | −0.0013 | −0.015 | 0.143 |
| Burma | 0.546 | 0.713 | (e) | (e) | 0.008 | 0.011 | 0.306 |

Remarks: (a) Calculated from Table VI (b) $\eta_{\Delta s}$ = elasticity with respect to change in the exchange rate (suffix $S$ and $L$ show short-run and log-run respectively). See Table II for (c) and (d) (e) The interest rate is unavailable.

## TABLE VIII (a), (b)

## EFFECT OF CREDIT RESTRAINT

| Country | M/P (c) | Constant | $y_{P2}$ (f) | $C$ (g) | $p^e$ | $\frac{\Delta s_t}{s_{t-1}}$ | $1-\lambda$ | $\bar{R}^2$ | $D-W$ (d)<br>$h$ (e) | Estimation technique |
|---|---|---|---|---|---|---|---|---|---|---|
| Japan | $M_2$/WPI | −7.592** | 0.762** | −0.103** | | | 0.141* | 0.991 | 1.759 | GLS |
| | | (−8.628) | (8.793) | (−3.162) | | | (1.539) | | 0.747 | |
| | $M_2$/WPI | −4.767** | 0.486** | −0.058* | −0.474* | | 0.466** | 0.992 | 2.031 | GLS |
| | | (−2.234) | (2.251) | (−1.341) | (−1.508) | | (2.037) | | — | |
| | $M_1$/WPI | −4.291** | 0.369** | −0.432** | | 0.405** | 0.341** | 0.919 | 1.816 | GLS |
| | | (−3.857) | (3.941) | (−4.049) | | (2.136) | (2.439) | | 0.755 | |
| | $M_2$/WPI | −8.345** | 0.730** | −0.1002** | −0.195 | 0.173** | 0.168 | 0.995 | 1.727 | GLS |
| | | (−3.082) | (3.105) | (−2.506) | (−0.621) | (2.337) | (0.645) | | — | |

Remarks: See Table I for (a), (b), (c), (d), and (e).
(f) See Appendix B.
(g) The credit restraint variable is the ratio of bank debits to income.

the velocity of circulation increases, and the fact results from withdrawal of demand deposits, at least partially.

TABLE IX[(a)]

SHORT-RUN AND LONG-RUN ELASTICITIES AND THE AVERAGE ADJUSTMENT PERIOD

| Country | $\eta_{yp_S}$ | $\eta_{yp_L}$ [(b)] | $\eta_{C_S}$ | $\eta_{C_L}$ [(b)] | $\eta_{\dot{p}^e_s}$ | $\eta_{\dot{p}^e_L}$ | $\eta_{\Delta s_S}$ | $\eta_{\Delta s_L}$ | AAP[(c)] |
|---|---|---|---|---|---|---|---|---|---|
| Japan | 0.762 | 0.887 | −0.159 | −0.185 | | | | | 0.194 |
| | 0.468 | 0.876 | −0.092 | −0.173 | −0.474 | −0.886 | | | 0.872 |
| | 0.369 | 0.560 | −0.739 | −1.120 | | | −0.007 | −0.011 | 0.518 |
| | 0.730 | 0.878 | −0.178 | −0.214 | −0.195 | −0.235 | −0.003 | −0.004 | 0.203 |

Remarks: (a) Calculated from Table VIII.
(b) The credit restraint variable *c* is the ratio of bank debits to income.
(c) See Table II.

## IV. Conclusions

From our estimation of the demand for money function for selected Asian countries, the following tentative conclusions are drawn. First of all, there seems to exist no clear cut relation between an income variable (permanent income) and the demand for money; economies of scale for the money demand do not seem to be confirmed.

Second, the expected rate of inflation is a better proxy for the opportunity cost of holding money than the rate of interest for most cases for the sample period.

Third, adding a proxy variable for exchange risk in estimation does not noticeably improve the estimated results for countries with floating exchange rate system. We include the rate of change in the exchange rate in addition to the rate of interest, with an implicit assumption that the opportunity costs reflected in both variables are different in nature.

Fourth, we investigate the possibility that some credit restraint variables would be significant in high income countries with developed financial markets. Since a developed financial market would be efficient in the sense that the rate of interest would reflect all necessary information to be utilized by the market participants, our finding that the demand for money in an economy with developed financial market, Japan, is much more sensitive to a credit restraint than to the rate of interest is, in a sense, suprising.

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[19] Three other variables that were available for quarterly basis (other than the discount rate) are (1) the ratio of reserve money to the net domestic credit of banks, (2) its rate of change, and (3) the rate of change of bank debits.

Finally, taking a closer look at AAP $= (1 - \lambda)/\lambda$, it could be concluded that the hypothesis that AAP is larger (adjustment speed is high) for economies with undeveloped financial market is not supported by our empirical results. Only two low income countries with less developed financial market exhibit larger AAP than Japan that has the most developed financial market.

Financial development would have many aspects, and our investigation is an attempt to interpret it in terms of the demand for money function. We believe more research is needed along this line of thought, since the demand for money is supposed to change as financial market develops.

## Appendix

### A. *Data*

All quarterly time series data used in this paper are from IMF-International Financial Statistics (except a few). $M_1$ and WPI for Burma are from Selected Monthly Economic Indicators (Ministry of Planning and Finance), but $M_2$ is not available.

A-(1) Income: GNP, except Burma (GDP)

A-(2) The rate of interest:

Japan, Pakistan: call rate ($r_c$), bond rate ($r_b$)
Korea, Thailand: discount rate ($r_d$)
Taiwan: $r_c$
India: $r_b$
Sri Lanka: advanced rate ($r_{AD}$)

For Philippines and Burma the rate of interest is not available for us. We use commercial paper price ($c_{pp}$) as a proxy for the rate of interest for Philippines.

A-(3) Deflator: Both Consumers' Price Index (CPI) and Wholesale Price Index (WPI) are used for all countries except Sri Lanka (only CPI is available). (Wage index is also used in preliminary experiments for Japan, Korea, Sri Lanka and Philippines).

A-(4) The Exchange Rate: The officially announced data in IMF-IFS.

A-(5) Money: Both $M_1$ (currency plus demand deposits) and $M_2$ ($M_1$ plus time and savings deposits) are used for all countries, except Burma (only $M_1$ is available).

### B. *Processed data*

B-(1) Permanent Income (see Darby [15]);

(a) Fit $Y_t = \beta_1 + \beta_2 t + \epsilon_t$ ($Y =$ GNP (GDP) and $t =$ time trend) and put $Y_{p_0} = \exp(\hat{\beta}_1)$.

Construct $Y_{pt}$ according to Model I:

$$Y_{pt} = 0.1 Y_{pt} + 0.9(1 + \hat{\beta}_2) Y_{pt-2}.$$

(b) Fit $Y_t = \beta_1' + \beta_2' t + \beta_3' t^2 + \epsilon_t'$ and put $Y_{p0} = \exp(\hat{\beta}_1')$.
Construct $Y_{pt}$ according to Model II:

$$Y_{pt} = 0.1 Y_{pt} + 0.9(1 + \hat{\beta}_2' + 2\hat{\beta}_3') Y_{pt-2}.$$

Judging from the $t$-value of the second-order time trend, we select Model II for Japan, Korea, Pakistan, Sri Lanka, Philippines, and Burma, and Model I for Taiwan, India, and Thailand. Then, we define $y_{p1} = Y_{pt}/\text{CPI}$, and $y_{p2} = Y_{pt}/\text{WPI}$. (We also defined $y_{p3}$ to $y_{p7}$ that were used in preliminary experiments. The results are available from the authors on request.)

B-(2) The Expected Rate of Inflation: We assume the following expectations formation mechanism:

$$\dot{p}_t^e = \sum_{i=1}^{n} w_i \dot{p}_{t-i} + \epsilon_t, \quad n = 5$$

The second order Almon lag technique is used to estimate $w_i$, $w_i = \alpha_0 + \alpha_1 i + \alpha_2 i^2$ with

(a) no end point restriction, and

(b) end point restrictions ($w_0 = w_{n+1} = 0$).

Since (a) is better for all cases, it is selected to construct the expected rate of inflation.

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# THEORETICAL EXPLANATION OF TECHNOLOGY AND SOME INTERRELATED NOTIONS: A CLASSICAL MARXIST PERSPECTIVE

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## Introduction

Technology is the word which has nowadays penetrated almost every sphere of social life. Its usage/misusage in everyday life is tremendous and probably there are very few people who are not drawn into 'the age of technology'. To a much lesser extent technology is known to the general public as one of the most debated issues in the course of the 1970s at the great world conferences. The conferences were held by many international institutions, and not surprisingly, because of different attitudes and orientations of these institutions, the outcomes on the issue have been different. Just to mention a few: UN (UNCSTED, UNDP, UNIDO etc.), IBRD, ICC, OECD, summits of Non-Aligned and Developing Countries, North-South Dialogue, non-governmental organizations. Beside this there is a number of nationally based institutions which operate by being attached to universities or by being directly subordinated to different governmental agencies in their home countries, which with their research activities have considerable impact on the issue as a whole.

Because there exists such a world-wide concern about technology, and since there is no uniform interpretation of that notion, it seems to us worth-while to consider closely and critically not only the notion of technology but the notions closely linked or interrelated to it. However, it would not be possible to consider all the views with which technology is concerned and which stem from the basic views on the world, the basic philosophical conceptions. They can be summarised from the Marxist perspective into bourgeois philosophical schools of thought, viz. post-hegelian philosophical traditions being phenomenology and egisistentialism, the empirical school of thought with its two main streams—logical positivism and pragmatism—and finally structuralism on the one hand and Marxism itself on the other. This crude division, naturally, does not list the whole range of 'small' differences within and 'in between' (eclectical views) these schools of thought. Here we have decided to treat the Marxist perspective, particularly of Marxist classics, for relatively speaking there is much less written on the subject of technology from the Marxist point of view than the others.

It should be mentioned that the Marxist view, being based on the

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philosophical conception of historical-materialism, and therewith originating itself from an amalgamation of different schools of thought, does not necessarily, as is often believed, reject *en bloc* all the other philosophical views on the world. So, there are no grounds for believing that Marxism rejects the overall produce of the bourgeois science.

Besides giving the theoretical explanation of technology, we tried to trace the methodological background of Marx's theory of technology which is based on the laws of materialist dialectics. Although it is difficult to look at these laws separately, for they constitute a whole in the final result of every analysis, we tried to single them out in various parts of Marx's analysis.

## I. Technology

The formulation of technology by Marx and by Engels, as well as whether they were right or wrong, still deserves to be a starting point for any serious investigation of that subject and its further ramifications. Their thoughts are widely used today, particularly in multidisciplinary and interdisciplinary scientific approaches, not only like a prolgomenon but as an amazingly fresh and convincing basis.

In spite of this, technology is often identified with machines or hardware of production excluding buildings. Indeed, Marx ascribed a special role to machinery in the process of production and the production of capital, this is still far from what he understood by technology.

Marx treated technology in two ways. On the one hand he treated it, more narrowly, as a science which originated from large-scale industry. In Chapter 15, *Machinery and Large-Scale Industry of the Capital*, vol. 1, he writes:

> "Its principle [large-scale industry—A.K.] which is to view each process of production in and for itself, and to resolve it into its constituent elements without looking first at the ability of the human hand to perform the new processes, brought into existence the whole of the modern science of technology. The varied, apparently unconnected and petrified forms of the social production process were now dissolved into conscious and planned applications of natural science, divided up systematically in accordance with the particular useful effect aimed at in each case." (pp. 616–7)

Although this can appear to some as a strictly technical aspect of the production process, i.e. the interaction between material elements of the production process, viz. means of production, Marx never excluded its social content.

The social content of technology has been fully acknowledged by some non-Marxist authors. In this respect R. S. Merrill says that technology includes "skills, knowledge and procedures for making and doing useful things."[1] Similarly, F. Stewart, in her book *Technology and Underdevelopment* is even more explicit in underlining that social content by stating that technology includes—besides the specification of what is produced—also how it is produced, which embodies managerial techniques, and that therefore technology must extend to services such as administration, education, banking and non-industrial production, namely agriculture.[2] Alongside this 'Western-style' view one can put the definition of technology proposed at IIASA by G. M. Dobrov together with A. Straszak and M. McManus, which at the same time represents the official Soviet Government attitude on the 'technological progress' based theoretically on Leninism, because of its striking similarity.

> "... it is vitally important to understand technology not only as a set of technical means (machines, tools, materials, etc., called *hardware*). It is not enough even to add the idea of 'know-how' (or *software*) which is already recognised as a component of technological systems. Technology must be seen as a unified system of hardware *and* software *and* a social-economic and organizational component (orgware) which can be defined as 'a set of organizational arrangements, specially designed and integrated, using human, institutional, and technical factors to support appropriate interaction of the technology and external system." (G. M. Dobrov, 1978, p. 92)

Because we consider as our task here to prove only that technology is not a mere means of production, we will not go into the entirely different issue of so-called managerial revolution which, after its victorious march in the Western developed capitalist societies is fully underway in the Soviet Union. However, it is important now to include Marx's views on technology which determine the meaning of the notion 'technology' in its wide form. Here as elsewhere Marx utilised the method of historical materialism where he took class contradictions as the main social law of motion. He continually stressed the importance of society and social class as the units of analysis. The social relationships he analysed as the acting of social individuals with their pertinent beings and consciousness resulting from their position within the economic structure or relations of production. The following statement discloses clearly his thoughts:

> "Technology reveals the active relation of man to nature, the direct process of the production of his life, and thereby it also lays bare the process of the production of the social relations of his life, and of the mental conception that flow from those relations." (*Capital*, Vol. 1, p. 493).

Much earlier, in fact at the beginning of their friendship and work, Marx and Engels expressed with these words their view concerning the importance of the production of material life, as opposed to Hegelian idealistic dialectics, in their book *The German Ideology*:

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[1] R. S. Merrill (1968).

[2] Cf. F. Stewart (1977), p. 1.

> "The phantoms formed in the human brain are also, necessarily, sublimates of their material life-process, which is empirically verifiable and bound to material premises. Morality, religion, metaphysics, all the rest of ideology and their corresponding forms of consciousness, thus no longer retain the semblance of independence. They have no history, no development; but men developing their material production and their material intercourse, alter along with this their real existence, their thinking and the products of their thinking. Life is not determined by consciousness, but consciousness by life." (Marx and Engels, 1845–6, p. 47)

Once again we will take the liberty of quoting the passage, which due to its shortness in a summary-form is often the subject of controversial interpretation by the authors of various ideological views including Marxist.

> "The mode of production of material life conditions the social, political and intellectual life process in general. It is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness. At a certain stage of their development, the material productive forces of society come in conflict with the existing relations of production, or—what is but a legal expression for the same thing—with the property relations within which they have been at work hitherto. From forms of development of the productive forces these relations turn into their fetters. Then begins an epoch of social revolution. With the change of the economic foundation the entire immense superstructure is more or less rapidly transformed." (Marx, 1859, pp. 181–2)

What becomes apparent from these few, unfortunately rather lengthy quotations, which we could not avoid, is that Marx considered that social system is composed of an economic base (material productive forces being also called technostructure[3] and relations of production or economic structure) and superstructure. The relationships of these two or three elements of social system are realised by the activity of social individuals. At this point the relationships between material productive forces and the relations of production—thus within the economic base—are of particular importance. What Marx is saying is that the main historical line of influence comes from the material productive forces which therefore determine the relations of production. On the basis of contradiction between these two elements of the social system Marx founded his theory of revolution as well. However, this view is often labelled as the technological determinism. The refutation of such an assertion is easy if we remember that the new relations and forces of production are developed not out of nothing but from within and in contradiction to the existing mode of production. Or, as N. Rosenberg puts it: "The essence of this view is that the class struggle, the basic moving force of history, is itself the product of fundamental contradictions between the forces of production and the relations of production. At any point in historical time, new productive forces emerge, not exogenously or as some mysterious *deus ex machina*, but rather as a dialectical outcome of a larger historical process in which both the earlier forces and relations of production play essential roles."[4] Eventually it is important to stress that although we accept the main line of historical influence this does not imply that there is no influence in all other directions between the elements of the social system. Here actually the same principles hold as in a multisectoral model which has all types of relationships—negative (homeostatic) and positive feed-backs. The former is a mechanism by which the existing variable is kept within certain limits—thus the mechanism of automatic self-regulation. The latter maintains and multiplies the spontaneous changes in reality, i.e. in the system or in some of its parts.[5] The functions of these links are in the dialectical contradiction and represent the basis of existence of all organized systems in reality and their dialectical negation through the process of development. But the detailed description is not possible to produce, hence the exact prediction is also impossible. For we are dealing here with the most complex probabilistic systems (industrial firm or national economy belong to this group as well).

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[3] This usage should be distinguished from the more common usage, e.g. K. Galbright's New Industrial State where it denotes a social stratum.

Up to now we have seen that technology, treated by Marx in its broader meaning, is identified with the mode of production of material life where the main force of social change, and therewith the production of material life, is influenced by class struggle. In this respect one should look at a passage from Engels where he was no less explicit than Marx:

> "The materialist conception of history starts from the proposition that the production of the means to support human life and, next to production, the exchange of things produced, is the basis of all social structure; that in every society that has appeared in history, the manner in which wealth is distributed and society divided into classes or orders is dependent upon what is produced, how it is produced, and how the products are exchanged. From this point of view the final causes of all social changes and political revolutions are to be sought, not in men's brains, not in men's better insight into eternal truth and justice, but in changes in the modes of production and exchange. They are to be sought not in the *philosophy*, but in the *economics* of each particular epoch." (Engels, 1880, p. 411)

Finally, after all that has been said up to now, we can conclude that the notion '*technology*' denotes a set of knowledge about processes and procedures which find their use in the processing of materials, in assembling the constitutive parts in production, and also in other sorts of activities such as management. Hence we have technology of management and correspondingly technology of education, technology of scientific research, etc. On the other hand, technology also denotes a set of these processes and procedures alone. For the sake of clarity one can refer to the former meaning as technological knowledge and to the latter as technology. By defining procedures and processes technology necessarily starts with the instruments of labour, objects of labour and subjects of labour and determines their role in the production process. Therewith technology determines the role and place of social individuals or subjective forces in the process of production.

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[4] N. Rosenberg (1976), p. 60.

[5] Cf. C. E. Shanon, W. Weaver (1949).

Before we start with the theoretical explanation of technology, a few additional explanations of the notions which have been used here already and those which we are going to use at some later stage are desirable. Very often these notions, of which the most important are development, science and progress, are used simultaneously with technology.

## 2. Development, Science, Progress

Most likely it is best to start with science. First of all the notion of science does not have only one meaning. Most frequently this notion denotes a systematized and argumentated body of knowledge about reality (which is composed of the material world, i.e. nature and society, and human praxis, e.g. production, political activity, etc. Linkages which exist between these components of total reality represent the ways through which interactions between these two domains of reality are realized and mutually conditioned. This realisation is present in the process of exchange of material substance, energy and information). However, science also denotes very often the set of all processes and activities which are directed towards obtaining knowledge about reality, their systematization, argumentation and verification. According to the latter, science embraces processes of extraction of information from reality, their systematic processing, argumentation of a constructed system of knowledge, permanent verification of this system in praxis and its permanent improvement on the basis of newly extracted information from reality which has been changed through praxis.

Although it has not been mentioned in the title of this chapter, it is important to say something about the technical means. Commonly this word is used in other languages in the same way as the word technology in English, and denotes means of labour. To distinguish this notion from all others which will be in use here, I shall refer to technical means as the materialization or objectification of accumulated knowledge and skill. Although these means are being primarily used in the sphere of production, they are also used in other realms of man's or society's activities. Therefore, although our main interest lies in the sphere of production, it should be borne in mind that the materialization of knowledge occurs in other spheres of social life also. This certainly has a considerable impact on the sphere of production. These spheres are numerous and it is impossible to list them all here (for example: materialization of knowledge occurs in durables, construction, devices for tertiary and quaternary activities, science, health, education, communication, culture, entertainment, etc.).

Now we come to one more notion which is empirically measurable, the notion of development. This notion is understood as every form of material movement, or process, or change, which is directed from lower qualities to higher qualities, i.e. from simple or simpler towards complex or more complex structures. However, although the qualitative change is the basic characteristic of development, and therewith development can be distinguished from any other form of material movements, it is no less important that every process of development has its quantitative aspect. In other words there are phases in the process of development where quantitative changes dominate. These phases represent the preparation for transition from lower to higher quality. The transition always occurs in the form of great leap changes caused by dialectical contradictions. The result is negation of negation, or the more complex structure which has been transformed from the old, more simple one. It is interesting to see how Lenin described it.

> "A development that seemingly repeats the stages already passed, but repeats them differently on a higher basis ('negation of negation'), a development, so to speak, in a spiral, not in a straight line; a development by leaps, catastrophes and revolutions; 'interruptions of gradualness'; the transformation of quantity into quality; inner impulses to development, imported by the contradiction and conflict of the various forces and tendencies acting on a given body, or within a given phenomenon, or within a given society; the interdependence and the closest, indissoluble connection of all sides of every phenomenon (history constantly discloses ever new sides), a connection that provides a uniform, law-governed, universal process of motion—such are some of the features of dialectics (than, the ordinary) doctrine of development." (Lenin, 1914, p. 12)

But development of any structure or system, in spite of the existence of adequate general laws which are inherent in the processes of development, cannot be totally determined thereby, for:

> "In historical development, chance plays its part, which in dialectical thinking, as in the development of embryo, *is summed up in necessity*." (Engels, 1973–83, p. 222)

Every step further in development, especially if it occurred spontaneously, reduces the room for alternative, purposeful directioning of development, and hence it can represent the loss, just as "each advance in organic evolution is at the same time a regression, fixing *one-sided* evolution and excluding the possibility of evolution in many other directions" (Engels, op. cit., p. 307). In another place Engels talks about it more vividly: "It is true that in the huge towns civilization has bequeathed us a heritage [he is referring to the concentration of industry—A.K.] which it will take much time and trouble to get rid of." (Engels, 1876–8, p. 352)

We shall see better the laws of dialectics in the presentation of Marx's theoretical analysis of technology, in particular the transition from cooperation to machinofacture (the law of the transformation of quantity into quality and vice-versa). For the time being we are giving just one more example of the law of the negation of negation by quoting the passage from Marx's *Capital*, Vol. 1:

> "The capitalist mode of appropriation, which springs from the capitalist mode of production, produces capitalist private property. This is the first negation of individual private property, as founded on the labour of its proprietor. But capitalist production begets, with the inexorability of a natural process, its own negation. This is the negation of negation. It does not re-establish private property, but it does indeed establish individual property on the basis of the achievements of the capitalist era: namely co-operation and the possession in common of the land and the means of production produced by labour itself." (Marx, 1867, p. 929)

In this last paragraph we have seen how dialectics or the theory of development is applicable in particular, viz., in political economy which analyses primarily capitalist socio-economic formation. This historical science reveals the historical laws of the development of capitalism.

Now finally we come to the notion of progress. Whilst the notion of development belongs, as we have seen, to the empirical domain, the notion of progress is entirely heuristically characterised, for it always presupposes a value judgement. We can say therefore that development, stagnation and developmental regress exist objectively in reality, whilst progress and its opposite notion, regress, are only a reflection of the real process in the social consciousness. It is not possible in relation to a certain change to speak about the progress or the regress in general. The characterization of a change as progressive or regressive depends upon posited targets. These targets can be posited by individuals, groups of individuals or society. This holds for every developmental process. In short, to consider one developmental process or direction as progressive hangs upon value judgements. The value judgements must not be mixed up, therefore, with the laws of development of human society based on the discovery of objective casual relationships. In this respect L. Colletti says:

> "It [Marxism—A.K.] discovers and analyses the laws which make the system work, describes the contradictions which undermine it from within and signal its destiny. But, insofar as it is a work of

> science and not ideology, *Capital* will not allow this analysis to be tainted with 'value-judgements' or subjective choices: instead it makes only 'judgements of fact', objective judgements, affirmations which in the last analysis are universally valid." (L. Colletti, 1973, p. 369)

One assertion can be made here in addition and in relation to the understanding that any spontaneous development represents progress. Such an opinion already presupposes a certain value-judgement which stems from adequate ideological commitments. Namely, such a value-judgement includes a passive acceptance of existing social relations as the best ones and a refusal of personal engagement in changing these relations. From such a commitment result the liberal attitudes towards the objective processes.

Bearing in mind the given terms, one can define further 'technical development' as any objective improvement of existing technical means, materials or products and creation of new ones. However, technical progress embraces also the creation of such technical means as are from the point of view of the majority not only useless but harmful (e.g. technical means for warfare, pharmaceutical products which can damage human health, technical means whose use leads to degradation of the human environment, etc.). On the other hand, technical progress can be understood as those directions of technical development where by means of value-judgement one can conclude that they contribute to bringing about certain goals.

In concordance with the previous definition of technology one can define technological development as the creation and introduction into usage of new procedures, methods of organization of labour and management and improvement of existing ones. Under the term 'technological progress' one can line up those directions of technological progress where one can conclude, on the basis of value-judgements, that they contribute to the realization of specific goals. It is important to note that the targets (goals) of technical and technological progress are not objectively given. For those who are in a position to make choices between technical or technological alternatives or between the directions of their further development, can posit their individual or class interest as the interest inherent in technical means and technology.

Since technology necessarily starts from available technical means in defining procedure and processes, the interdependence between technical means and technology, technological and technical level, and hence between technical and technological development and progress, is self-evident. On the one hand, possible technological solutions are dependent upon available technical means, and on the other hand practical realization of technical solutions are dependent upon technology. Technology with its development instigates technical development and makes possible its practical application, whilst technical development enables improvement and development of technology.

In the post-war period it is difficult to imagine technical and technological development and progress without science, scientific research, and scientific systematization and dissemination of relevant knowledge.[6]

In concordance with the definitions already made we can define a few more. Technological policy in the sense of social technological policy (to be distinguished from the technological policy of a firm, for it happens very often that the interests of a firm are not in concordance with the broader social interests) should be treated as a part of general policy of socio-political and economic development; hence it is interrelated to other parts of general policy such as: economic policy, regional policy, policy of education, etc. The strong interdependence between policies comes out at the point of their realization, hence it is necessary to bring about the concordance between them.

Transfer of technology and transfer of technological knowledge appear as the most important elements in the process of defining technological policy (as its constituent factors and also the means for its realization). These two transfers do not necessarily go together. Transfer of technological knowledge represents the transmission of specific knowledge, whilst transfer of technology represents the transmission of procedures and processes alone. Transfer of technological knowledge need not necessarily accompany the introduction of technology, but the availability of adequate technological knowledge can result in the emergence of self-styled original technology. On the other hand transfer of technology does not necessarily mean the transfer of adequate knowledge, for it can be transferred with a minimum of technological knowledge.

Finally, although the focus of our interest has been science, technical means and technology, it is perfectly legitimate, also, to say a few words about the notion of productive forces in general—this primarily because, according to some views, it is still debatable whether science and technical-technological knowledge count as productive forces—and secondly, to perceive the role of science among other productive forces. One of the main reasons why some Marxists still do not include in productive forces science and other factors which influence the intensification of social production is that they have reduced the meaning of productive forces on mostly empirically measurable factors (the means of labour, labour and experience and habits of that labour) which was first formulated by Stalin in his *History of SCP*. However, from the whole Marx opus stems that in productive forces should be included all factors which with their development directly or indirectly influence the development and intensification of social production. If one should like to refute such a wide definition of productive forces in Marx's work, the following passage removes any doubt about how Marx considered science in relation to productive forces:

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[6] Not so long ago in the theory of economic growth the view about the role of capital as the basic factor of development in the 'modern industrial society' was prevailing. The application of the Cobb-Douglas production function has, however, shown that the scientific and technical change in highly industrialized countries (USA) became independent and decisive parameter of economic growth (cf. R. Solow, 1957).

> "As with the transformation of value into capital, so does it appear in the further development of capital, that it presupposes a certain given historical development of the productive forces on one side—*science too* (*is*) *among these productive forces*—and, on the other, drives and forces them further onwards." [The emphasis is ours.] (Marx, 1857–8, p. 699)

In another place in *Grundrisse* Marx emphasized that the development of science is one side or one form in which appears the development of human productive forces, for he says that science is "ideal and at the same time practical wealth." (Cf. Marx, op. cit., p. 540.)

It is interesting, for example, that some Marxists in England still equalize productive forces with technology. Barratt Brown obviously has in mind material productive forces when he equates them with technology.[7] Although he is basing his statement on 'Preface to a Contribution to the Critique of Political Economy' where Marx refers to material productive forces in particular, Barratt Brown omits to specify productive forces as material. This confuses the whole thing, for, as we have seen, productive forces have a much broader meaning. Even if we accept that he is implicitly referring to material productive forces, we cannot, according to our definition of technology, accept their being equalized with technology. For technology is not just a thing.

On the other hand, French Marxists refer to the relations of production as a mode of production.[8] The latter term is to my mind more suitable for socio-economic formation. This in turn confuses the whole debate about the *main* forces in socio-economic development (viz. whether they are material productive forces/mainly claimed by Eastern European Marxists/ or relations of production/French structuralists) and the role of the two. In our opinion the whole question has been put erroneously, for Marx, although giving the primacy to the material productive forces ("It is not what is made but how, and by what instruments of labour, that distinguishes different economic epochs. Instruments of labour not only supply a standard of the degree of development which human labour has attained, but they also indicate the social relations within which men work." *Capital*, Vol. 1, p. 286), in *ultima linea*, considered development of economic base in terms of dialectical unity between material productive forces and relations of production.

This general historical tendency, which was to Marx a simple truism, does not necessarily imply that on various levels of development the importance of other elements of the social system cannot gain a more prominent role. With the growing complexity of social systems it is natural that the other lines of influence are developing as well. Take, for example, the influence of super-structure (education) on the development of material productive forces. At a certain stage the impact of education (which is shaped according to the nature of super-structure, i.e. to the social class which is dominating it and therewith has the opportunity to posit through education their goals which are later objectified in material productive forces)[9] can be considerable on material productive forces, and these again can influence the other elements of the social system in a number of ways which we have discussed here only fragmentarily.

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[7] Cf. M. Barratt Brown, 1974, p. 48.

[8] Cf., for example, Lefebvre, 1948 and L. Althusser and E. Balibar (1970).

Lastly it must be pointed out that Lenin, analysing the development of capitalism, concluded that capitalism after entering its monopoly phase became parasitic and decaying[10] which is the obstacle to development of material productive forces on the scale on which it would otherwise be possible. Because of this nature of capitalism he was a proponent of the anticipation of social conditions for freer development of material productive forces by changing the relations of production, i.e. changing the form of ownership of the means of production from private to state or social ownership.

Having presented these definitions and some views related to them, we proceed to the Marxist theoretical explanation of technology.

## 3. Theoretical explanation of technology

After having analysed the basic categories of capitalist society, commodity and commodity-producing labour, Marx was able to proceed to 'higher' basic concepts which hinge upon these—value, exchange-value and surplus-value. Precisely the last category, the surplus-value, which is Marx's basic discovery and around which is centred *Capital*, Vol. 1, as an analysis of the process of production of surplus-value, is our point of departure for explaining the Marxist theory of technology.

To show how the production of surplus-value occurs it was necessary that capital itself be subdivided into the constant and the variable capital. This division of capital was made in order to distinguish between that part of capital which is only the precondition for the production of sulplus-value but does not produce it by itself, and was named therefore constant, apart from the variable portion of capital by which capitalists buy the labour-power of workers, which is the living labour and only capable of producing additional value. This distinction was made from the point of view of the valorization process of capital or value-creating process, which is carried beyond the point where the value paid by the capitalist is less than an equivalent for the labour performed.

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[9] Cf. H. D. Bahr, 1970.

[10] Cf. Lenin, 1916.

But the production process of commodities was considered by Marx as the unity of the two: the process of creating value and the labour process which is inherent in all modes of production. The capitalist process of production or the capitalist form of the production of commodities he considered as the unity of the labour process and the process of valorization.

Marx paid special attention to the labour process as the ahistorical condition of human existence. He used it as his starting point in the analysis of technology and considered it independently of any specific social formation, since the general character of the production of use-values does not alter if it is carried on under the control of a capitalist and on his behalf. Labour process, analysed into its simple and abstract elements, does not reveal the conditions under which it takes place. But before we come to Marx's definition of the labour process we must see how he considered labour, labour-power and the simple elements of the labour process.

> "Labour is, first of all, a process between man and nature, a process by which man, through his own actions, mediates, regulates and controls the metabolism between himself and nature. He confronts the materials of nature as a force of nature. He sets in motion the natural forces which belong to his own body, his arms, legs, head and hands, in order to appropriate the materials of nature in a form adapted to his own needs. Through this movement he acts upon external nature and changes it, and in this way he simultaneously changes his own nature." (Marx, 1867, p. 283)

This labour is actually labour-power in action. Without performing labour, labour-power is only labour as potentiality. Such labour is far removed from the instinctive forms of labour performed by animals, and it is an exclusively human characteristic.

> "A spider conducts operations which resemble those of the weaver, and a bee would put many a human architect to shame by the construction of its honeycomb cells. But what distinguishes the worst architect from the best of bees is that the architect builds the cell in his mind before he constructs it in wax. At the end of every labour process, a result emerges which had already been conceived by the worker at the beginning, hence already existed ideally." (Marx, 1867, p. 284)

With this we have already come to one of the simple elements of the labour process—purposeful activity. The other two are the object on which the work is performed and the instruments of that work. The objects of labour are all those things which labour merely separates from nature or things (raw materials) which have been filtered through previous labour, i.e. which have already undergone some alteration by labour and are being used further in production. On the other hand there are instruments of labour which Marx defines as:

> "a thing, or a complex of things which the worker interposes between himself and the object of his labour and which serves as a conductor, directing his activity onto that object." (Marx, 1867, p. 285)

Generally speaking, from this moment when man interposed between himself and the object of labour another object of nature, i.e. an instrument of labour, the historical process of development of material productive forces has started. The history of development of the instruments of labour is the history of social production and the history of the development of humanity.

> "Relics of bygone instruments of labour possess the same importance for the investigation of extinct economic formations of society as do fossil bones for the determination of extinct species of animals." (Marx, 1867, p. 286)

About the instruments of labour Marx is also saying that man makes use of the mechanical, physical and chemical properties of some substances in order to set them to work on other substances as instruments of his power, and in accordance with his purposes. Marx is making use here of Hegel's view about human reason from his *Logic*:

> "Reason is as cunning as it is powerful. Cunning may be said to lie in the intermediative action which, while it permits the objects to follow their own bent and act upon one another till they waste away, and does not itself directly interfere in the process, is nevertheless only working out its own aims." (Hegel in *Marx*, 1867, p. 285n)

So, through his activity man learns about the laws of nature and above all he learns how to use them for his own purpose. In so doing he is changing himself but not these laws which constitute the basis of his purposeful activity. In relation to causality of natural laws Engels wrote:

> ". . . we find that a particular motion is followed by another, we find also that we can evoke a particular motion by setting up the conditions in which it takes place in nature, that we can even produce motions which do not occur at all in nature (industry), at least not in this way, and that we can give these motions a predetermined direction and extent. In *this way*, by the *activity of human beings*, the idea of *causality* becomes established, the idea that one motion is the *cause* of another . . . the activity of human beings *forms the test* of causality." (Engels, 1873–83, p. 230)

In *Grundrisse* Marx is even more explicit when he talks about the development of productive forces:

> "No longer does the worker insert a modified natural thing as a middle link between the object and himself; rather, he inserts the process of nature, transformed into an industrial process, as a means

between himself and inorganic nature, mastering it. He steps to the side of the production process instead of being its chief actor." (1857–8, p. 705)

Marx was also fully aware that at different stages of development different instruments of labour can be of varied importance, such as the vascular system of production, which besides instruments of labour of the mechanical kind gains importance in the chemical industries.[11] Similarly, today, the role of the cybernetic machine is becoming essential for extracting, systematization and dissemination of information about reality, creating therewith the new basis for the development of the body of knowledge which would be otherwise impossible. Predictions about the growth of computer capacity, although very optimistic at the time they were made, under-estimated the tremendous growth of this capacity.[12] Hence we are not far from saying that the degree of intensity of computerization of various branches is the main indicator of technological development. Such a state of affairs one can ascribe to a large extent to a changing role of science as a productive force. Namely, scientific discoveries encouraged the development of technology in the time of the industrial revolution, but their immediate application was then only accidental.[13] Taken historically, the development of technical means preceded the development of science. The many inventions in the 19th century and before emerged independently from the state of science. In this respect the example of England is characteristic, where the industrial revolution took place, bypassing the universities. Gradually the impact of science on technological development was becoming ever more direct and intensive. Already in the midst of the last century the development of natural sciences reached such a level that inventions and innovations were based more on science than on the empirical experimentation and chance within industrial production.[14] Inventions based on science greatly accelerated the technological development, simultaneously forming an independent branch of research and development as the most expansive sector of human activity. Here we must add that if we look at the whole process from the point of view of the valorization of capital, we cannot conclude with J. Bernal that science in our age has become an "immediate force of production"[15], for R&D is primarily the function of capital valorization. That means that scientific inventions are only incorporated into material production through innovations which are always subjected to policy criteria. Hence a lot of science remains only a potential and not a real force of production.

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[11] Cf. Marx, 1867, p. 286.

[12] Cf., for example, G. Bruck, 1964, p. 155.

[13] Cf. T. K. Derry and T. I. Williams (1960) and D. S. Landes (1969).

[14] Cf. C. Freeman (1974), pp. 161–3.

[15] See J. D. Bernal (1969), p. 1248.

Finally we reached the stage where we can give the definition of the labour process by Marx:

> "The labour process . . . in its simple and abstract elements, is purposeful activity aimed at the production of use-values. It is an appropriation of what exists in nature for the requirements of man. It is the universal condition for the metabolic interaction (Stoffwechsel) between man and nature, the everlasting nature-imposed condition of human existence, and it is therefore independent of every form of that existence, or rather it is common to all forms of society in which human beings live." (Marx, 1867, p. 290)

As we stated at the beginning, the capitalist process of production is the unity of labour process and valorization process. We have also stated that the difference between the process of creating value and the process of valorization is nothing but the continuation of the former beyond a definite point. This point is reached when the value paid by a capitalist is an exact equivalent to the labour power he gets. However, the production process as the unity of labour and value-creating processes with its result—commodity—one can find in pre-capitalist modes of production as well. It follows that commodity existed long before the emergence of the capitalist mode of production, as the result of social division of labour. To explain the transition from pre-capitalist modes of production into the capitalist ones Marx made great use of the laws of dialectics, and in particular the law of transformation of quantity into quality. Namely, an ever-increasing spontaneous division of labour combined with the development of material productive forces resulted in an increased exchange of commodities. The circulation of commodities gave rise to the emergence of merchant wealth in the form of money and commodities. But the mere existence of money and commodities is only an elementary form of capital and is not capital; the same holds good for the owner of money and commodities, for he becomes a capitalist only under certain circumstances. Thus money and commodities, and hence also the means of labour (capital's mode of existence as use-value), are only potentially capital—something to be transformed into capital. From this it follows that production and circulation of commodities do not imply at all the existence of the capitalist mode of production, although they are its necessary preconditions. But once the commodity has become the general form of the product, which means that sale and purchase embrace not just excess produce but that everything that is produced assumes the commodity form of the product, the capitalist mode of production has emerged. The commodity, being the premise of that mode of production, is also the product of capitalist production once the commodity has become the universal elementary form of the product. This implies that labour-power has become the commodity as well, which means "that the rival members of society confront each other as persons, that they deal with each other only as the owners of commodities and that they come into contact with each other only in this capacity".[16] The difference between a commodity which is the precondition of capitalist production and the one that emerges from capitalist production is that the former is an autonomous article in which a specific amount of labour-time is embodied, having therefore an exchange value of a definite amount, whilst the latter is only a part of the total produce, an ideal fraction or aliquot part containing both paid and unpaid labour (the fraction of socially necessary labour which is objectified in commodity but appropriated by capitalist without any equivalent being paid).[17] It follows that the result of capitalist production is the mass of commodities which contain the old capital-value, i.e. capital-value invested, and the surplus-value appropriated in the process of capitalist production. Hence these masses of commodities must be sold on a scale to realize the old capital value (objective and subjective conditions of labour) and also materialization as surplus-value of the surplus labour consumed during the same process of production.

Having come to the category of surplus-value, we have automatically transcended from production process as the unity of value-creating process and labour process to production process as the unity of valorization and labour processes.

It appears that production of surplus-value is a historical *specificum* of capitalist production process. The capitalists' aim "is to produce not only use-value, but value; and not just value, but also surplus-value."[18] Which "is nothing but the production of *surplus labour*, *the appropriation of unpaid* labour in the course of the actual process of production."[19] Besides this we will see in our further discussion that the production of surplus-value is the necessary precondition of the existence of the capitalist mode of production, and because of its contradictory nature it causes the tendency towards an end of that mode of production. Here lies the core of the explanation of the Marxist theory of technology.

Since we have already been discussing the labour process in general and the origin of surplus-value as an eminently capitalist historical category, we may turn for a closer look to a production of surplus-value and the impact of the latter on the labour process.

We are implicitly assuming that the values equal prices, which means that commodities are bought and sold at their value. A commodity value is determined by the quantity of labour materialized in its use-value by the labour-time socially necessary to produce it. The same holds for the value of labour-power, for the value of a day's labour-power amounts to the subsistence required every day for the production of labour-power.

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[16] K. Marx (1933), p. 977.
[17] Cf. K. Marx (1933), pp. 953–4.
[18] K. Marx (1867), p. 293.
[19] K. Marx (1933), p. 978.

> "But the past labour embodied in the labour-power and the living labour it can perform, and the daily cost of maintaining labour-power and its daily expenditure in work, are two totally different things." (Marx, 1867, p. 300).

So in actuality of capitalist production process labour-time is divided into two: the necessary labour-time and the surplus labour-time. Working more labour-time than is socially necessary to produce his means of subsistence, the labourer produces surplus-value for the owner of the means of production which, when viewed from the standpoint of the valorization process, represents constant capital.

If we further assume that the value of labour-power is a constant magnitude, then the surplus-value is directly dependent upon surplus labour-time. Increasing the surplus labour-time in relation to the socially necessary labour-time means the increase of the rate of surplus-value or the rate of exploitation. But the physical exploitation has natural limits.

> "Capitalist production . . . drives, by its inherent nature, towards the appropriation of labour throughout the whole of the 24 hours in the day." (Marx, 1867, p. 367)

Lengthening the working day to the whole 24 hours is obviously not possible. So we may say that capitalist production used the lengthening of the working day as a source of surplus-value until its exhaustion or until it reached its natural limits. Such surplus-value is called absolute surplus-value. But does the production of absolute surplus-value influence the real nature of the labour process, the actual process of production or the actual mode of labour? It has already been discussed how capital came into being. At that early stage "capital subordinates labour on the basis of the technical conditions within which labour has been carried on up to that point in history. It does not therefore directly change the mode of production."[20] What capital does at that stage is to acquire command over labour, or in other words capitalists take care that the workers do their work regularly and with the proper degree of intensity. Also at that stage capital develops into a coercive relation, thus compelling workers to do more work, i.e. to produce surplus-value above the value which is required to cover their needs.[21] With this it is possible for the capitalist to extend as far as possible the duration of labour—all in order to increase the surplus-value that it yields. Here

> "the labour process becomes the instrument of the valorization process, the process of the self-valorization of capital—the manufacture of surplus-value." (K. Marx, 1933, p. 1019).

All that has been said about the extraction of the absolute surplus-value is the general form of every capitalist process of production, and this Marx refers to as the formal subsumption of labour under capital which should be distinguished from real subsumption of labour under capital or a specifically capitalist mode of production. So, when we deal with the production of surplus-value in the absolute form it is assumed that the mode of production is given, although this is the first moment of industrial labour.

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[20] K. Marx (1867), p. 425.

[21] Cf. Ibid., p. 424.

But in order to survive, the capitalist mode of production must revolutionize its own basis:

> "The bourgeoisie cannot exist without constantly revolutionising the instruments of production, and thereby the relations of production, and with them the whole relations of society. Conservation of the old modes of production in unaltered form was, on the contrary, the first condition of existence for all earlier industrial classes. Constant revolutionising of production, uninterrupted disturbance of all social conditions, everlasting uncertainty and agitation distinguish the bourgeois epoch from all earlier ones." (Marx & Engels, 1847–8, p. 38)

Being fundamentally determined by three conditions: (1) the mass of producers are dispossessed of the means of production, being forced therewith to sell their labour-power to the owners; (2) the owners are organised in the separate firms which compete with each other; and therefore (3) these owners are compelled to extract the maximum of surplus-value from the producers in order to accumulate more and more capital; the capitalist mode of production leads under conditions of generalized commodity production to concentration and centralization of capital, increase in the productivity of labour, growing organic composition of capital, the tendency of the rate of profit to fall and periodical crises of over-production.

But as we have seen in considering the extraction of absolute surplus-value, there is the natural limit which is posited by the number of simultaneous work days or of living labour capacities, i.e. by the labouring population. For the expansion of the appropriation of labour through augmentation of absolute surplus-value being limited, the only possible way arises from the curtailment of the necessary labour-time, and from the corresponding alteration in the respective lengths of the two components of the working day being socially necessary labour-time and surplus labour-time. This second form of surplus-value is called the relative surplus-value. However,

> "the tendency of capital is, of course, to link up absolute with relative surplus value; hence *greatest stretching of the working day with greatest number of simultaneous working days, together with reduction of necessary labour time to the minimum, on one side, and the number of necessary workers to the minimum, on the other.*" (Marx, 1857–8, p. 770)

It follows that the reduction of necessary labour-time or augmentation of surplus labour-time at the expense of necessary labour-time can only be achieved by the increase of the productivity of labour.

> "By an increase in the productivity of labour, we mean an alteration in the labour process of such a kind as to shorten the labour-time socially necessary for the production of a commodity, and to endow a given quantity of labour with the power of producing a greater quantity of use-value." (Marx, 1867, p. 431)

For shortening the part of the working day in which the labourer works for himself, and thereby lengthening the other part of the day in which he can freely work for nothing, i.e. for the capitalist, is the objective of the development of the labour productivity. But before this productivity has been raised capital must revolutionize the technical and social conditions of the labour-process and therewith the mode of production. In other words, capital must transform the labour-process which it took over from the previous modes of production in order to raise productivity which is directly proportional to the relative surplus-value. The real foundation for raising productivity is the formal subsumption of labour under capital, for it gives ground for the enlargement of the scale of production which in turn constitutes the basis for the emergence of a specifically capitalist mode of production. This growth in the scale of production is a typical example of the application of the law of the transformation of quantity into quality, dialectical law, for at a certain stage an enlarged scale of production brings about the qualitative change. The capitalist is simultaneously compelled by competition and spurred by the prospect of obtaining surplus-value only if he can produce a product at the value below the value of the average socially necessary labour-time. This can be done only by ever increasing production of the relative surplus-value.

> "on this foundation there now arises a technologically and otherwise *specific mode of production—capitalist production*—which transforms the nature *of the labour process and its actual conditions*. Only when that happens do we witness the *real subsumption of labour under capital*." (Marx, 1933, pp. 1034–5)

With the production of relative surplus-value the real subsumption of labour under capital comes into being whereby the labour process becomes the direct function of the valorization process of capital. Hence the labour process is being organised and dominated by the needs of capital, and even more it appears as the productive power of capital.

We are deliberately avoiding giving a presentation of Marx's empirical investigation of the development of technology carried out in *Capital*, Vol. 1, for we asssume that this part is more than well known. Here we shall present only a short summary on the development of technology, which was written long before the actual investigation took place, because it is a valid representation of the results in Vol. 1.

> "Simple tools; accumulation of tools; composite tools; setting in motion of a composite tool by a single hand engine, by man; setting in motion of these instruments by natural forces; machines; system of machines having one motor; system of machines having an automatic motor—this is the progress of machinery." (Marx, 1946–7, p. 128)

Combining this developmental order of machinery with our earlier discussion on absolute and relative surplus-value, i.e. on formal and real subsumption of labour under capital, we can summarize as the following: the production of absolute surplus-value predominated before the emergence of the modern factory. The increase of productivity was predominantly the result of more and more advanced forms of the division of labour where the labour is controlled by capital. But the mode of production remains basically the same. This changed with the industrial revolution when production became mechanised, or with the increasing application of machinery in the process of production. Living labour becomes subordinated to the mechanical needs of machinery and reorganized around it. This is the stage where the main source of surplus-value became the increased productivity of labour based on development of technology. From these few lines we can conclude again that Marx was applying the dialectical law of transformation of quantity into quality.

At this point it becomes apparent how much the development of technology and technical means is deeply rooted in the production of relative surplus-value. Besides, they are at the same time the necessary precondition of the production of surplus-value and thereby developing forces of production continuously.

But in addition to the dialectical law mentioned above, Marx simultaneously applied the other dialectical law, viz. the law of the interpenetration of opposites. By penetrating the political struggles in bourgeois society, he recognized the revolutionary role of the proletariat and its real movement, which is only able to abolish the existing state of things. The class struggle between labour and capital, although present at early stages of capitalism, fully unfolds in modern machinofacture[22] due to alienation of labour, of the product of their labour and contents of the work itself. The contradiction between capital and labour is of the greatest importance for the Marxist theory of technology, for it offers an explanation for the directions of technological development.

> "In England, strikes have regularly given rise to the invention and application of new machines. Machines were, it may be said, the weapon employed by the capitalist to quell the revolt of specialised labour. The *self-acting mule*, the greatest invention of modern industry, put out of action the spinners who were in revolt. If combinations and strikes had no other effect than that of making the efforts of mechanical genius react against them, they would still

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[22] Cf. Marx, 1867, pp. 340–416.

> exercise an immense influence on the development of industry." (Marx, 1846–7, pp. 154–5)

And even more generally, i.e. not only capital against a certain fraction of the working class, viz. qualified workers, but against the working class as a whole:

> "Finally, from 1825 onwards, almost all the new inventions were the result of collisions between the worker and the employer who sought at all cost to depreciate the worker's specialised ability." (Ibid., p. 130)

This is the way in which capital reacts against any obstacle which can jeopardise the continuity of the production of surplus-value. If they are in the form of skill, capital tends to deskill them or substitute them by machines.

In short, one can conclude that there is dual pressure on technological development: one to produce surplus-value and the other to secure this production.[23]

It appears that machines are capital's main weapon for the increase of the surplus-value, which is the reason why they should be discussed at this point. The course of the development of the machine has been already mentioned. This development is always related to the development of the division of labour. With the accumulation and concentration of instruments of labour and workers inside the workshop the division of labour develops too, and *vice versa*. Or, one can say that big technical inventions boost the division of labour and *vice versa*, viz. that division of labour gives rise to new inventions. As Marx objected in 1847 to Proudhon:

> "Labour is organised, is divided differently according to the instruments it has at its disposal. The hand-mill presupposes a different division of labour from the steam-mill. Thus it is slapping history in the face to want to begin with the division of labour in general, in order to arrive subsequently at a specific instrument of production, machinery." (Marx, 1846–7, p. 123)

At the stage when industry was able to produce machines by machines, the whole process, which was until then rather slow, accelerated immensely. The augmentation of machinery and division of labour leads inexorably to the reduction of production costs. At the same time work (concrete-labour) is being made more simple.[24] In other words machines and division of labour are substituting the more expensive labour with a cheaper one. From this it follows that the labourers who have been replaced by machines are always forced to accept such labour which is worse than the previous.

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[23] There is an interesting point which we would like to make here in relation to the latter. If one goes to a logical extreme of capital's tendency to remove barriers of its valorization, it is likely that the theoretical starting-point for the origin of the military-industrial complex can be found.

[24] The recent critiques of the division of labour in the factory have been extensive. See, for example, Gorz, 1973, 1977.

The accumulation and concentration of machinery means the augmentation of production on an ever-increasing scale. However, the growth of productive capital in machinery is not accompanied by a similar growth in wages. If this should be the case, the purpose of the use of machinery and the division of labour would be senseless from the viewpoint of the valorization of capital. Generally speaking, the development of material productive forces, with their sophisticated means of communication and transport,[25] speeded up the circulation and turnover of capital, which means that it is possible within a certain unit of time to produce more, or, according to the law of competition, that more must be produced, since productive capital can bring profit only if it produces on an ever-increasing scale. Again this means that the production is carried out on ever tougher terms. The condition for survival in competitive struggle is the production on a larger scale, which means further concentration of capital in fewer hands. But to make this greater production profitable the part of productive capital, machinery, must expand disproportionately faster in relation to the part of productive capital, wages. In other words, the general law which necessarily stems from the relations between capital and labour is that in the course of growth (accumulation and concentration) of productive capital, the part of this capital which is invested in machinery and raw materials grows disproportionally in relation to the other part of the capital which is spent on labour, i.e. the labourers must split between themselves an ever smaller part of that capital in relation to the total mass of productive capital. If we continue to use for a little longer the vocabulary of *Volume 2*, then we may say that competition forces predominant growth of department one ad absurdum.[26] Indeed, there are points in economic development where the growth of department one or the production of means of production is predominant (the engagement of social labour fund is the greatest), as in England in the period of the industrial revolution and after. However, this is still not enough to deduce the aprioristic position[27] that technological development means exclusively the growth of the organic composition of capital, i.e. the predominant growth of department one. To accept this would mean to accept the law of predominant growth of department one, which is, as we have seen, only the general law of capitalist accumulation, as the general (ahistorical) law of social reproduction. Models made on such an assumption thus mostly accuse reality of being wrong (sic). For example, P. C. Mahalanobis's model made on the basis of Marx or respectively G. A. Feldman did not take into account the predominant importance of the production of machines by machines which was actually the new sector within the sector of department one—which means that the model should have had three sectors. The same holds for Feldman's model.

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[25] Fröbel et al., 1978, pp. 22–27.

[26] Magdoff explains the present recession mostly by 'the existence of industrial overcapacity in all the advanced capitalist countries'. (H. Magdoff, 1979, p. 11)

[27] This position is held by many Soviet positivist economists although labelled as Marxist; also, surprisingly, M. Dobb (cf., for example, Dobb, 1956, particularly Ch. 7).

We will now summarize some conclusions in relation to machinery treated as part of productive capital[28] and which is therewith necessarily related to labour. If there is a growth of productive capital as there is during a boom, this is the most favourable situation for labour, for the demand for labour grows relatively. But from the character of modern industry and the nature of capital it results that the same circumstances which make the productive capital grow also make labour more redundant. In other words, the growth of machinery makes a growing disproportionality between the labourers and the means for their employment. Here we have the development of opposites, or more precisely quantitative change in this process of development—the two laws of dialectics combined. Or one can say that capital grows only when it employs labour (surplus-value). At the same time capital is getting rid of its only source of valorization. This point of the negation of the negation we shall come to later on. For the main condition for the growth of wages is the growth of productive capital which therefore makes the labour even more redundant. If there is only a slow growth of productive capital or if it stagnates or even falls, then the number of labourers is always too big with all the consequences of such a position.

Further, we can make conclusions on machinery from which technology starts and by which the material conditions of labour determine the role of social individuals in the process of production. We have seen, when we have been discussing the real subsumption of labour under capital, that the labour is reorganized around machinery inasmuch as production becomes mechanized. From the point of view of capital, instruments of labour are using labour, hence subordinating it to the only purpose of the production process—the production of surplus-value. Therefore the labour is alienated not only from the products of labour but from the contents of the work itself. Secondly, only by machines is it possible to produce the relative surplus-value. This is the imperative of capitalist production under the conditions of competition—to save labour and thereby to cheapen commodities, for only relatively cheaper commodities, i.e. those which contain less than is the average socially necessary labour time can be a basis for accumulation of capital. By securing the production of surplus-value with the labour-saving machines we arrive at the third characteristic which is the reproduction of redundant labour or the reserve army of labour. The mass of unemployed labourers who are expelled by machines or employed but constantly competing between themselves because of deskilling (specialized labour is becoming scarcer), keep the wages fluctuating in proximity to the value of labour-power. As soon as the labour-power is paid at its value, surplus-value is guaranteed to the owners of the means of production.

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[28] Marx distinguishes three kinds of capital in the circulation process: (1) Money capital as the final aim of capitalist production; (2) Productive capital as basic presupposition; and (3) commodity capital as necessary transitory phase.

With the form of the ownership of the means of production and the objective socialization of labour by capitalism we will consider Marx's application of the dialectical law of the negation of the negation, which will at the same time be our last set of conclusions on Marxist theory of technology.

Because, as we have seen, capitalist private property tends to concentrate in ever fewer hands, thereby negating individual private property based on the labour of its proprietor, the character of production being carried by the mass of labourers socializes. This socialized labour dealing under the conditions of highly developed division of labour can produce only collectively, hence can create wealth only collectively, unlike individual labour which is scattered and stagnant for it lacks such a rise in productivity. The workers who are being socialized by the capitalist mode of production Marx calls collective workers. But this collective worker must not be summed up as just a mere direct or manual labourer.[29]

This collective worker is more an ideal part of an average of the social labour force which is only by all its limbs capable to produce. The collective worker conditions even the state of machinery, because the production of knowledge embodied in machinery is also socialized.

> "The skill resides not in the worker but in the machine and in the scientific combination of both as a whole in the factory. The social spirit of labour obtains an objective existence separate from the individual workers." (Marx, 1857–8, p. 529).

Being socialized and interdependent to such a high extent, the production is ever more incompatible with the appropriation of the results of this production by the few. Using the same laws by means of which Marx proved that the negation of individual private property was the establishment of a more concentrated form of property, the capitalist private property, i.e. the replacement of the former one with its negation which is a new one but of higher quality, he also made a prophetic statement concerning the future in the following way:

> "The transformation of scattered private property resting on the personal labour of the individuals themselves into capitalist private property is naturally an incomparably more protracted, violent and

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[29] Cf. Marx, 1933, p. 1053.

> difficult process than the transformation of capitalist private property, which in fact already rests on the carrying on of production by society, into social property. In the former case, it was a matter of the expropriation of the mass of the people by a few usurpers; but in this case, we have the appropriation of a few usurpers by the mass of the people." (Marx, 1867, pp. 929–30)

Considering the form of property and the becoming of objective socialization of labour, we have seen that the capitalist mode of production abolishes private property and private labour transforming them into means of production concentrated in few hands and social labour (through cooperation, division of labour, and the uniting of labour with the natural sciences).[30]

At the end we have to mention the increase of the productivity of labour which necessarily goes with the two mentioned above, and which is also the moving contradiction tending to resolve itself through dialectical processes, i.e. the development in general into a new quality. The increase of labour productivity means the declining share of living labour in relation to the share of objectified labour, and this labour productivity increases in such a way that the total labour materialized in a commodity declines. In other words, the living labour decreases more than materialized labour increases, which is the only way to reduce the total value of a commodity. On the basis of the decrease of the share of living labour value of a commodity, Marx concluded that this is the main cause of the fading away of the fundament of capitalist mode of production, since the living labour is the only source of surplus-value. In other words, as soon as the theft of alien labour-time would cease to be the source of wealth, this labour time would cease to be the measure of that wealth, and hence exchange value would cease to be the measure of use-value.[31]

## Conclusion

> "Hand in hand with this centralization, or this expropriation of many capitalists by few, develops on an ever-extending scale the co-operative form of the labour process, the conscious technical application of science, the methodical cultivation of the soil, the transformation of the instruments of labour into instruments of labour only usable in common, the economizing of all means of production by their use as the means of production of combined, socialized labour, the entanglement of all peoples in the net of the World Market, and with this, the international character of the capitalist regime." (Lenin, 1914, p. 25).

We can say that modern large-scale industry has universalized competition in spite of protectionism, whereby the process of the development of productive forces and technology also became a universal process or a function of production process on a world scale.

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[30] Cf. Marx, 1894, p. 266.

[31] Cf. Marx, 1857–8, p. 705.

Some authors define the sources of surplus-value (or, more precisely, surplus profit which is higher than an average surplus-value) at the present stage of development of capitalism as technological innovation, cheap raw materials and cheap labour,[32] as a result of the integration of a production system on a world scale. In other words we have now, due to the large-scale industry, a world history where every civilized nation and every individual is dependent upon the whole world. Simultaneously with this integration, the capitalist socio-economic formation definitely polarized to centre and periphery. Although we know that developed countries took by force and other means more from their 'satellites' than they gave back, which is actually the hierarchy of unequal exchange,[33] we are still lacking an explanation which would really achieve a dialectical dynamic analysis of the world-wide historical process of capital accumulation in which both metropolitan economic development and dependent peripheral under-development should be analysed as a single whole. Thus it is also not enough to analyse only the contradictions of the capitalist mode of production in the metropolises themselves, as Amin, Bettelheim, Palloix, dos Santos suggest. In the description of the whole process they, including Frank, are however very accurate in saying that today's underdeveloped countries are characterised by an arrested or stagnant division of labour, laggard technology lacking any thorough-going industrialization, and reinforcing and perpetuating underdevelopment. In order to analyse each particular underdeveloped country's mode of production it is of crucial importance to elate it to the stage of development of capitalism (viz. mercantile capitalism, liberal, oligopoly and finally monopoly capitalism) in the core countries at the time when they actually penetrated the 'traditional societies', thus causing these underdeveloped countries to continue 'developing' as dominated subsystems of the core countries with the tendency that through their further integration as subsystems they are losing their individuality (negation of their individuality) or, even more, the entire loss of continuity of their existence. But here we will try to answer the question: why did the capitalist mode of production not eliminate the inferior modes of production in their periphery to the same extent as it did in the metropolitan countries?

For the answer to this question one has to look at the form of the development of productive forces of capitalism. This form is conditioned by a capitalist dominant characteristic, i.e. capital-social relation and its mode of solving the contradictions within the dichotomy—production and appropriation of surplus-value. The primary aim of capitalism is neither the satisfaction of human needs nor the development of productive forces but the extraction of surplus-value and maximization of profit.

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[32] Cf. Mandel, 1972, pp. 73–107.
[33] Cf. Frank, 1967.

The mode of penetration of capitalism into the periphery (which changed in accordance with the phase of capitalist development in central capitalism) was primarily the positing of capitalism's main interest, i.e. to establish the monopoly of exploitation and the monopoly on the increase of labour productivity in order to channel all the benefits to core countries. On the basis of such division of labour, technologically conditioned, the periphery developed exclusively as a realm of production and extraction of surplus-value which by functional unity of productive forces is automatically accumulated in centres. In such a way every 'traditional' mode of production which was able to ensure, under the given conditions, the production of surplus-value by means of maximal exploitation of labour, found its place in the capitalist socio-economic formation of periphery.

The development of the peripheral economies of world capitalism is essentially only the reflection of the development of the productive forces on the world level, hence the development of the periphery has been until now adapted in its entirety to the development of the forces of production on the world level as they lacked their potential for development. In addition to all the limitations of the internal character such as small domestic markets, the lack of adequate labour-power, etc., the more serious limitations faced by the peripheral countries with regard to the development of the productive forces stem from the form of the development of world capitalism. These limitations are the lack of own accumulation (for it is being permanently drained out) and the imposed production structure which is not integral but only partial. Hence, every further development of the peripheral economies which is maintained from outside must be only partial and must embrace only those segments of production which represent the source of the increase of labour productivity regardless of the already achieved productivity of labour.

The development of the periphery maintained from outside is strictly based on the flows of surplus value moving from the periphery to the centres of capitalism. Every possible increase in the market or realization of investment reflects itself in terms of the investment accelerator and the multiplier, above all, in capitalist centres instead of in the periphery. Therefore the degree of modernity and high labour productivity has very limited impact on the development of the production structure in the periphery. The market in the periphery remains relatively stagnant, employment increases very slowly and the sector of 'modern' production grows relatively much more slowly than in the centre. About the so-called scientific-technological complex and the production of the means of production hardly anything can be said in the peripheral countries. High-labour productivity which has been realised by the modern means of production in the production of final products in the periphery enables great scale production with small employment, thus causing relative surplus-labour which tends to grow even further. Also, with the further technical and technological development, the possibilities for employment in the 'modern' sector of production in the Third World countries are relatively declining in relation to the growth of population, thereby causing ever bigger population pressure on agricultural production. Simultaneously, transnational corporations are transferring certain segments of their production into the periphery and are thus absorbing highly and semiqualified labour, by means of higher wages, in order to secure and stabilize their own production.

Today, the class characterization of the capitalist mode of production, on the world scale, is increasingly expressing itself as the relation between the centre and the periphery. The instrumentalization of this relationship finds its expression in the pattern of modern macro-technology as the mode of organization and management on the macro-level. This mode is based on a domination of technical principles and technical means. Such macro-technology is today the basic articulator of productive forces and besides this the basic factor of all interdependences world-wide. The macro-technology is also the decisive determinant of the limitation of the realm of human freedom. Such macro-technology includes division of labour on a macro-level, i.e. on national levels and on the level of transnational corporations.

The principles on which the macro-technology is based are: unification, standardization, stability, reliability, and efficiency of functioning. With its development such macro-technology has a tendency, by means of its perpetrators and adequate technical means and systems, to impose these principles on society as a whole, and consequently determines not only the role of individuals but of whole nations and perhaps even continents.

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# FUTURE DIRECTIONS IN ASEAN'S ECONOMIC DEVELOPMENT

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The last two decades have seen phenomenal economic growth in Thailand, Indonesia, Philippines and Malaysia. In terms of macro indicators the economic performances of these countries are good.

Industrialization has been the most important driving force of such phenomenal growth in these countries. Industrialization of these countries has started from the important substitution in the 1960s, but it could have shifted to the exporting industries in the 1970s. The industries which have succeeded in shifting to the exporting are the labour-intensive ones. They have the competitive power in the international markets of the manufactured goods and then the products are exported to the developed countries such as the United States of America and Japan. They seem to be following their neighbouring NICS countries such as Korea.

Agricultural sectors in these countries have seen also rather high growth. The productions of basic foodstuffs such as rice have increased in spite of the fact that the cultivation frontiers of land have been almost exhausted. The investment in irrigation facilities and the development of the so-called high yielding rice varieties are the sources of recent growth of agricultural sectors in these countries.

In spite of recent good performances in economic growth, there still remain the economic problems, the most important one in which is the increasing numbers of unemployed and underemployed in the urban and rural areas. This fact implies that the labour absorptive power of the industrialization and also of agricultural growth have been insufficient to absorb the increasing labour force due to the rapid growth of population. The future development of these countries' economies should tackle this issue.

What type of development strategy is needed in the next decades mainly for taking this crucial issue of the future economic development? Is the further development of the labour-intensive exporting manufacture in industries feasible and desirable? Is the other path of economic development emphasizing more the inward-looking industrialization desirable? The author would like to discuss such problems in this paper.

## *I. Industrialization in ASEAN*

Before going to observing recent economic developments in Thailand,

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Indonesia, Philippines and Malaysia (hereafter referred to as ASEAN), it might be necessary to specify the political environment in which economic development of ASEAN countries has been proceeded. In ASEAN countries, the concept of economic growth, defined as the growth of GNP or of per capita GNP, has been established as the essential component in their nation-buildings. Such a concept was established under Sarit's Phadthanaa (Development) in Thailand, Suharto's Orde Baru (New Order) in Indonesia, Marcos' New Society in Philippines, and Razak's New Economic Policy in Malaysia. The concept of economic growth has got the legitimacy in each country's domestic politics.

The basic philosophy underlying economic growth policy in ASEAN countries is the economic nationalism, because economic growth has been located as the one part of their efforts towards nation-building. Even though introduction of foreign capital and technology has been adopted as the powerful instrument for accelerating economic growth, it should not be ignored that economic nationalism has the highest legitimacy in ASEAN countries. The so-called "Bumiptra" policy in Malaysia and also in Indonesia is, needless to say, their own type of economic nationalism.

The growth performances of ASEAN economies during the last two decades within this political environment can be said "satisfactory" especially in terms of macro indicators.

Thailand, Malaysia and Indonesia showed per capita GNP growth during 1960–79 of 4.6%, 4.0% and 4.1% per annum, respectively. Philippines with a growth rate of GNP per capita of 2.6% per annum during 1960–79 compared unfavorably with other three countries but its magnitude was not so unsatisfactory.

The share of agriculture in the gross domestic product in terms of the average dropped from 39% to 26% over the period 1960–79, while the share of manufacturing increased from 12% to 17%. In comparison, the shifts in Thailand and Malaysia were much larger. In Philippines, which had a more developed structure of production already in 1960, the change has been more limited. In Indonesia, the share of manufacturing in total output has increased moderately to 9% in 1979 and this can be only partly explained by the sharp rise in share of oil in the total economy over the last decade. While the manufacturing sector has, relatively speaking, lagged in Indonesia, it has expanded vigorously in Thailand and Malaysia.

It is beyond the scope of this paper to analyze more fully the growth performances of these countries, but it should be emphasized here that in every country the growth performance of manufacturing sector has been phenomenal. The growth of labour-intensive exporting manufactures is the most crucial element in this area specially during the 1970s. The growth of exporting industries such as the textile industry instead of the import-substituting ones could characterize the recent development pattern of ASEAN economies.

Such an outward-looking pattern of ASEAN economies has been clearly shown in Table 3. The ratio of the manufactured goods to the total export has rapidly risen in three countries except Indonesia from the 1960 to 1978. It might be clear that ASEAN countries could succeed in shifting from the import substitution phase to the exporting promotion phase in the course of industrialization. ASEAN economies seem to be now following their neighbors, Asian NICS, represented by Korea.

The reasons why ASEAN has succeeded in such a shift in the pattern of industrialization are as follows. The first reason is the economic growth of the developed countries such as the United States of America and also Japan. The rapid economic growth and structural changes in these developed countries in the 1960s and in the 1970s could enlarge the markets of the ASEAN exporting industries. Second reason is that the exporting industries of ASEAN economies are the labor-intensive ones, and then it could have the comparative advantage in ASEAN where the labor is the abundant factor. The growth of the exporting industries in ASEAN economies is consistent with economic theory of international trade. Lastly, it should not be neglected that the governments of ASEAN countries have tried to develop these industries through many policy instruments.

The growth of manufacturing sector, especially of the labour-intensive exporting manufactures, is the most important characteristic of recent economic development in ASEAN countries, even though the growth of agriculture should not be ignored. It should also not be ignored that these satisfactory performances in industrialization have strengthened the legitimacy of the contemporary political leaderships in ASEAN countries.

## *II. Choice between Outward-looking and Inward-looking Industrialization*

It has been made clear that the growth performances of ASEAN economies realized during the last two decades were rather satisfactory in terms of macro indicators such as growth rates of per capita GNP. At the same time, many forecasts seem to agree that ASEAN countries, together with Asian NICS, will be as a dynamic centre of growth in the world economy in the 1980s as they were in the 1970s. (For example, please refer to the proceedings of the International Symposium on "Two Decades of Asian Development and Outlook for the 1980s" in March 1982 organized by the Institute of Developing Economies.)

Even though the past growth performances were satisfactory and the growth performances in the next decade will be also satisfactory in terms of macro indicators, there still remains the important issue such as enlargement of the size of the unemployed and underemployed both in the urban and rural areas. This fact implies that the labour-absorptive power of recent industrialization is not sufficiently large enough to employ the rapidly increasing numbers of labour forces. In the urban areas in ASEAN countries, the size of the "urban poor" and the "urban informal sector" is increasing, and in the rural areas the number of landless labourers and of tenants is increasing. It can be said that ASEAN has failed to achieve "equitable growth". This situation seems to undermine the contemporary legitimacy of political leaderships in ASEAN countries. Anyhow achieving "equitable growth" by providing more fully the employment opportunities for the increasing labour forces will be the most important issue in the future of economic development in ASEAN countries.

One direction in the future development strategy of tackling this issue is the further development of the labour-intensive exporting industries. Recently a new paradigm seems to be established in development economics. This paradigm is emphasizing the further development of labour-intensive exporting industries as the key for absorbing the unemployed and underemployed. It is recommending the trade and interest-rates liberalization policy as the necessary condition of the further development of these industries. This paradigm is derived from the study of Korea's experience of high economic growth. The economic doctrine underlying this paradigm is the neo-classical one saying that, if the distortions in the products and also the factors markets are eliminated through the adoption of trade and interest-rates liberalization, the market mechanism could result in the most efficient allocation of resources such as capital and labor. The resulting situation of resource allocation will be the enlargement of labour-intensive manufacturing industries, because the abundant factor is labour in ASEAN countries. (For example, please refer to Yasuba, Yasukichi, "Development of Exporting Industries in Thailand", *Southeast Asian Studies*, University of Kyoto, Dec. 1981).

Is such an outward-looking strategy desirable or feasible for the development strategy of ASEAN countries in the next decades? Firstly it should be emphasized that the development of such exporting industries is heavily depending on the economic growth of the developed countries. In the next decades it cannot be expected that the growth of the developed countries will be as high as in the last two decades. It is also expected that the protectionalism will be strengthened in the developed countries. If this outlook about the developed countries is correct, the future growth of the exporting industries in ASEAN will be highly restricted. In this sense, the author thinks, further development of such industries in ASEAN is not so desirable as the new paradigm in development economics argues.

Secondly the policy measure such as the trade and interest-rates liberalization might not be possible in ASEAN countries because of the domestic factors. Already the interest-groups have been strongly established in the import-substitution industries, and these groups have the strong power in the policy making on ASEAN countries. In terms of economic nationalism, which is legitimate in ASEAN's domestic politics, the liberalization of import means transfer of economic opportunities of producing some consumers goods from ASEAN people to foreigners such as Japanese. Therefore it cannot be so easily anticipated that the ASEAN countries will be able to adopt such policy changes in the foreseeable future.

The alternative to the outward-looking industrialization recommended by the new paradigm in development economics, the author would like to emphasize here the necessity of further industrialization in the rural areas. The most fundamental condition which could support rural industrialization is the growth of the agricultural productivity and of the real income of the agricultural population. The growth of the agricultural productivity and of the real income of the agricultural population will increase the demand for the products of the nonagricultural sectors, and such increases in the demands from the agricultural sector might be the major source of the incentives for the nonagricultural sectors.

The inward-looking industrialization focussing on the rural industries is highly connected to the agricultural growth. The conditions for further productivity growth in agricultural production have already been created. The investment in the irrigation projects and also in the development of high-yielding varieties has been increased in ASEAN countries. As for the labour-absorptive power of agricultural production, the introduction of double cropping of rice recently diffused widely in ASEAN countries is increasing the labour-demand throughout a year. Anyhow the possibility of further growth of agricultural sector and employing more labour in agricultural productions in Asean countries seems to be great. (Please refer to Hara, Yonosuke, "Agricultural Growth and Policy in Asia" presented to the International Symposium on "Two Decades of Asian Development and Outlook for the 1980s", March 1982, the Institute of Developing Economies.) In this sense the possibility of the inward-looking industrialization in ASEAN countries seems to be rather large.

Needless to say this type of industrialization is desirable, because it can absorb the increasing numbers of labour force in the rural areas, and then it can reduce the increasing trend of the unemployed and underemployed in the urban areas. At the same time, the inward-looking industrialization focussing on rural industrialization is legitimate in terms of ASEAN's economic nationalism.

### *III. Implications for Cooperation between Japan and ASEAN*

The outward-looking industrialization recommended by the new paradigm in development economics is not feasible and desirable, but this does not deny the fact that exporting manufacturing industries will play important roles in the coming decades. In this connection Japan should make transformation of her economic structure consistent with the future development of labour-intensive exporting manufacturing industries in ASEAN.

It has been discussed above that the agricultural growth itself is the precondition for rural industrialization. The possibility of further growth in agricultural sector in ASEAN seems to be rather great. But, needless to say, there remain some bottlenecks for future agricultural growth in ASEAN. Most of the land which can be irrigated so as to provide a sufficiently high rate of return to justify the investment involved, has already been provided with irrigation facilities, while the costs of petroleum-based fertilizers and insecticides have risen with oil price increases. These two are the most important bottlenecks. Efforts to step up agricultural productivity will therefore have to be more and more directed to ensuring that the full potential of presently irrigated areas through saving petroleum-based inputs and that productivity in rainfed and dry areas is increased. This will require some redirection of agricultural research efforts, both at the international and national levels. Japan should provide more co-operation in this field.

The other field in which Japan can contribute to ASEAN's future economic development will be found in the area of ecological problems emerging in the recent process of rapid economic growth. Within such ecological problems destruction of forest should be emphasized here. Throughout ASEAN countries cultivating lands for rice and other crops have been expanded recently by opening the forest. This expansion of cultivating lands has absorbed the increasing population in the rural areas, but the fertile soil there has been washed away by the rainfall because the forest has been destroyed. The resource such as the fertile soil is now being lost, and this trend will, without any uncertainty, restrict the availability of resources for the future generation in ASEAN countries. As regards destruction of forests in ASEAN countries, it should not be ignored that the trees in the forest are now being cut, without any measures for replanting, for exporting the timber to the developed countries. This will result in imbalances in ecological system as well as restricting the economic opportunities for the future generation. In short, recent destruction of forest is making narrower the availability of resources for the future generation, even though it could have made larger the job opportunities for the present generation. The size of the future generation is surely larger than the present generation, because the growth rate of population is still positive and high. The development strategy should be formulated not only by focussing on the job and economic opportunities for the present generation, but also by including the policy measures providing the economic opportunities sufficiently for the future generation. Such measures for the future generation will not be easily installed in the market mechanism, the institutional framework within which the recent high economic growth has been realized in ASEAN. Nowadays the arguments for such policy measures seem to be supported only by the radicals within the economic nationalism, even though it is uncertain to the author whether the political power of such radicals is strong or not in each ASEAN country. It can be said, however, that the increasing ecological uncertainties for the future generation are now undermining the legitimacy of the contemporary political leaderships in ASEAN countries. Basically the decision-making regarding the policy measures for the future generation should be formulated within the economic nationalism, but Japan can, the author believes, contribute in this area through the following channels:

(i) technical cooperation in the research projects on ecology of the tropical forest, which has not yet been studied sufficiently,

(ii) economic cooperation in the projects of soil conservation and of afforestation.

ASIAN JOURNAL OF ECONOMICS & SOCIAL STUDIES Vol. 3, No. 1 (1984), 75-84

## *BOOK REVIEW*

# POPULATION POLICY AND COMPULSIONS IN FAMILY PLANNING

*By* VASANT P. PETHE: published by Continental Prakashan, Vijaynagar Colony, Pune-30, India, 1982; pp. 70+188: Rs. 45, US$ 6

*Reviewed by* M. G. KULKARNI, Director, Nehru Institute of Social Studies, T. M. V. Nagar, Gultekdi, Pune-37.

## Population Policy : Its Broader Social & Ethical Dimensions

Books on the population problem are legion. But this book by Vasant P. Pethe is certainly a book with a difference. The difference lies in the fact that it does not play the usual neo-Malthusian cassette: that India is the second most populous country in the world, that its population would reach the staggering figure of 1,000 million by the turn of this century, that our fruits of economic development are being eaten away by the increasing mouths, and that therefore we, and the world, are doomed, unless we do something very drastic to tame this hydra-headed monster, and so on. The book sets in fresh air in this all too familiar and all too drab literature. "What oft was thought but never so well expressed" is the motto of a text-book. "What oft was thought but never so well challenged" is the test of an original work. Pethe's book belongs to the latter category.

This book is really two-in-one: the Preface contains 70 pages and the main text 188 pages. A superficial reader may wonder as to the logical connection between the two. However, it is very much there. While the preface, a mini-monograph by itself, presents the broad socio-economic and cultural context of the population problem, the text explores, against the backdrop of this context and in depth, the multifarious implications of population policy in general and compulsory family planning in particular.

The title of the Preface, "The State of the Population Question", is self-expressive. However, it does not fall in the usual standard categories of periodic reviews like, for example, the "State of the Population" report of the United Nations Fund for Population Activities (UNFPA)—which is a routine annual feature. The subtitle of the Preface, "A Critique and Broader Perspectives for 1980s and Beyond", really suggests what it is. The Preface is a critical and reflective appraisal of the inter-related problems of population, poverty and social change with futuristic perspectives.

Pethe has a definitive philosophy and a conceptual approach to view the population problem. To begin with, he shows, with full evidence, how the Western approach, neo-Malthusian philosophy, ethno-centrism, many reactionary ideologies, urban elitist biases and powerful political lobbies supporting the vested interests have all distorted the true perception of the population problem vis-a-vis the socio-economic ills facing the Third World including India. He then convincingly establishes his central thesis that the population problem is not one of merely numbers, as established thinking would make us believe, but one of appropriate economic development, egalitarian social transformation and a wise choice of values. In such a wider context of the population problem, the author emphasizes the need to discard alien models, especially of the Anglo-Saxon and American genre, and develop what he calls the "models of the soil" based on our own needs, genius and culture, for our development in our own way. One wishes Pethe had given such a model or at least had outlined its essentials. He realizes this, but he points out that he proposes to do this in his forthcoming work, as discussion of models is a theme for a complete book while population is the major concern of the present book (P. 15). Fair enough!

Pethe carries a good deal of conviction when he argues that the prevailing erroneous conceptualization of the population question has gravely misdirected research, policy and program implementation in the area of family planning (FP) and population-related matters. Misdirection in research has led to over-emphasis on studies concerning fertility and KAP (Knowledge, Attitude and Practice) of FP, leaving aside many political, economic, cultural and ethical aspects of the population problem. The author characterizes most of the demographic research in the LDCs and especially in India as "mediocre and unimaginative" (p. 24). In this connection, he refers to similar findings by the International Review Group on Research on Population. As regards policy and program implementation, he substantiates how "tagetry" and the 'carrot and stick approach", which have failed to deliver the goods, is the direct result of the stereotyped Malthusian habits of thinking. In the course of this discussion, Pethe reviews boldly and unsparingly the Report of the Working Group on Population Policy appointed by the Planning Commission, Government of India (1980). He has criticized the Working Group on the following three major counts, viz., (1) that it has failed to face squarely the basic questions concerning the philosophy of social transformation without which any discussion of population policy as an inseparable component of overall social policy is sterile, (2) that it adopted an escapist approach to accommodate conflicting ideologies of its members, and (3) that its recommendations represented an assorted collection rather than an integrated whole. It is creditable that the author's criticism is not just destructive. He has a specific alternative to offer. He believes that only a fundamental change in the social system can solve the problems of population, poverty and underdevelopment. However, this does not mean that we should wait with our fingers crossed, until the revolution or the like takes place. In the book he has suggested a positive program of action that is feasible even under the present set-up, if there is a strong political will to perform.

In brief, Pethe's program-package includes (A) short-term measures like threshold reduction in infant mortality, employment guarantee, provision of social security, equity in distribution, and (B) long-term measures such as rapid modernization of production processes, generating aspirations for a prosperous worldly life, reversing the inter-generational flow of wealth, etc. Implementation of these programs, according to the author, requires a sufficient institutional set-up. In this connection, he suggests the following organizations. These organizations have been classified into four groups according to the influence they are intended to have on the various facets of the population situation, viz. (A) conceptualization of the population-development problem, (B) research, (C) policy, and (D) program implementation. (A) Organization to aid conceptualization: National Commission on Population, Technology and Social Transformation. (B) Organizations to reorient research and strengthen the data base: (1) Council for Research on Population and the Related Concerns, (2) Intelligence Service for the Continuous Flow of Population Information, (3) Informal Interdisciplinary Groups for Population-Development Research in Universities, (4) a thorough revamping of the existing Population Research Centres (PRCs) funded by the Ministry of Health, most of which are bringing out research products which, to use the author's words, are "neither academically enlightening nor practically useful". (C) Organizations to help policy formulation: (1) Ministry of Population and Human Resource Development; (2) Committees for Policy and Administrative Integrations. (D) Organizations to effect efficient program implementation: (1) Indian Population and Human Resource Development Service, as an independent cadre of the IAS, (2) Federation of Voluntary Organizations involved in all kinds of population and development work. It is true that a few of these suggestions are not new. However, most of them are indeed novel and original. But the essential point is that unlike the Planning Commission Working Group's suggestions, they are not of an ad hoc nature hanging in the air without an integrating principle; they have emerged organically from the philosophy, which the author has propounded in his Preface.

Advocacy of compulsions or inordinately strong disincentives in FP represents, according to Pethe, the climax and the inevitable logical consequence of the Western paradigm of social order with neo-Malthusianism as its inalienable part. It is in this way that the extensive Preface, which the publisher characterises as Shavian, leads logically to the main text of the book, viz. an in-depth study of the issues concerning compulsions in Family Planning, both physical (like compulsory sterilization) and situational (like strong deterrents).

The most remarkable feature to be noted here is that the author has explored this issue of, what in the USA is usually termed as involuntary fertility control, in a truly interdisciplinary manner. He has unfolded very ably and step by step the manifold economic, political, sociological, cultural and ethico-philosophical dimensions of this most controversial problem. Pethe is well-known as a population-scientist. In this book, he has also shown his versatility in political economy and other social science disciplines. The author points out that the crux of the matter is whether coercion in FP is rationally a right policy and/or ethically a good policy. He comes to the conclusion, with the help of incisive reasoning and available evidence, that compulsory FP is neither a right policy nor a good policy for population control. To establish his case, the author has put to close scrutiny the premises which underlie the various arguments advanced in favour of mandatory fertility control. Pethe is relentless when he comes down heavily on the arguments made by the Compulsion School of thought. The major arguments examined in the book are as follows: (1) That population explosion is the cause of poverty and the main villain of piece in the drama of the social scene; (2) that the masses are indiscreet and irresponsible in procreation; (3) that the very physical survival of mankind is in jeopardy because of the population bomb; (4) that if there is compulsion in some spheres (e.g. primary education), why not in FP; (5) that while 'we' (meaning the educated elite) restrict our family size, why should not 'they' (meaning the poor masses) also limit their family size; (6) that cost-benefit analysis demonstrates that small family is universally good, i.e. good for the rich as well as for the poor, et cetera.

It is very interesting to find that Pethe has marshalled the armoury of his logic, available evidence and his vast experience in field surveys so effectively and devastatingly that these seemingly unchallengeable pro-compulsion arguments are reduced almost to a rubble of simplistic, scientifically untenable and empirically invalid non-sense. This book-review cannot go into the details. But as a sample, see how the author meets the argument that societal survival itself is in peril, because of the population bomb which is ticking away every instant and hence compulsory F.P. is imperative. The author hits back thus: "Cries about doom have been made since the days of Malthus. However, these prophets of doom have always been proved wrong. History shows that mankind has survived and prospered. If there have been crises in societies or in the world or if they are likely to occur in time to come, it would be more enlightening if causes are sought to be discovered in the fundamental defects of the social order within nations, or in the inequities amongst nations than in the socalled population explosion which can be just a symptom of these fundamental defects" (pp. 54–56). The author feels that the words population explosion, population bomb or population crisis are highly loaded words and hence should not have a place in any serious discussion. Also, he dismisses "the-irresponsible-procreation-by-the-rural-masses" argument made by the experts as itself irresponsible. He agrees that fertility levels are high in the rural areas. But, as he contends, so are also the mortality levels. With the help of official data, the author proves that the natural growth rate (which is more crucial than merely fertility rates) is higher and not lower in the urban areas than in the rural. In this way, the author has demolished quite a few misconceptions widely prevalent in the literature, sometimes shared even by the socalled experts.

In his elegant Chapter on the "Summing Up", the author makes interesting comparisons between the compulsory FP Model and the Voluntary F.P. Model. He characterizes the former as violent, undemocratic and uncivilized. The greater paradox is that it cannot serve the very purpose it seeks to serve, viz. promotion of F.P. Movement. Our Emergency experience (1975–77) has shown that compulsory FP instead of bringing down fertility, brought down an omnipotent Government in the election. Contrarily, the Voluntary FP Model has a progressive and dynamic orientation. As the author puts it: "To crown it all, it has the grace and decency of a cultured society where a trade-off between human rights together with a healthy family welfare movement cannot be made for the doubtful and supposedly quick results in FP, brought about under the ominous shadow of compulsion" (p. 117).

It is very important to note that though Pethe has launched almost a crusade against the Western model, neo-Malthusianism and compulsions in F.P., he has made it abundantly clear that the present rate of population growth must be brought down but for reasons other than those which the Malthusians believe in, and that the family planning movement must go forward at a much faster rate than at present. Though ends may look similar, means are basically different. The author laments that only a lip service is paid to the dictum that "Development is the best contraceptive". He points out that the widely believed linkage between population and progress, viz. F.P. → control of population growth → economic development → social transformation and progress, is not true. Indeed, it is the other way round. The correct linkage is that egalitarian social transformation coupled with economic development would create a proper climate to make family planning a people's movement, leading to population stabilization and an all round social progress. The present book-reviewer feels that there is lot of sense in this line of thinking. Indeed, this is what happened in many Western countries, and this is what is happening in China. It is misleading to say that China has accepted Malthus. China has first tackled the problems posed by Marx and now she is finding it easy to tackle Malthus. India wishes to tackle Malthus, side-tracting Marx. As a result, she is tackling effectively neither Marx nor Malthus. She is finding herself in a perpetual mess of intractable problems.

One may or may not agree with all that Pethe has said in his book. But one thing is beyond doubt: He has a philosophy and an approach which is conceptually much more clear and backed by programatically effective methods than we usually find elsewhere. Hence, the book under review merits serious and meticulous perusal by intellectuals, funding agencies, policy-makers and enlightened citizens at large. It is indeed very courageous of and creditable too for the author that he has set himself against the firmly rooted orthodox thinking and against the champions of Malthusianism and the doctrine of mandatory fertility control. These champions included many eminent political leaders (e.g. Karan Singh, S. B. Chavan, Mohan Dharia) academicians (e.g. A. B. Shah, S. N. Agarwala, V. M. Dandekar, Mrs. Kumudini Dandekar), social workers (e.g. Banu Coyaji, Dr. Pai) and government officials (e.g. M. S. Palnitkar). The book presents a formidable case against the socially harmful Malthusian ways of thinking which lead to the slippery path, ending in coercion in FP. The ball is now in the court of the other side. It is a powerful challenge to them.

Sometimes, it is said that compulsion is a dead issue. However, it is certainly not so. Following the maxim that diplomacy is the better part of valour, academics no less than politicians are not advocating compulsory FP in an overt manner, under the present climate emanating from the backlash of the Emergency excesses in FP program implementation. However, in private, many do feel and say that there must be compulsion, if the population explosion is to be brought under control. Anyway, the theme that the book deals with is intensely controversial. Hence, it needs debate to explore truth.

Pethe's book has become very readable. Controversial issues often grip one's attention. In this connection, the author's review of the mini-debate between Asok Mitra and V. M. Dandekar concerning the economics of family size, with his own comments thereon sometimes flavoured with sarcasm, makes interesting and spicy reading.

The book under review suffers from some deficiencies which the author may like to make up for, in his later editions. In the first place, he often refers to models—alien and indigenous—but does not offer any details about them. Since he regards social transformation as crucial in solving our problems, readers naturally expect its detailed substantive and operational content. The author should therefore elaborate some of his observations in this regard. Secondly, many a time, qualities may have their own defects. Pethe's relentless crusade for the poor masses against neo-Malthusianism and coercion in FP is understandable. He has succeeded in laying Malthus' ghost to rest. However, references to Malthusianism have been rather too frequent in the whole book.

Thirdly, non-social scientists are not usually familiar with certain concepts or theories in Demography, Economics, Sociology, etc. But the author expects, and rightly so, non-social scientists and enlightened citizens to read his book (p. 63). For them to appreciate his arguments, it is necessary to explain these concepts or theories in non-technical language (e.g. Malthusian Theory, Harrod-Domar Model, Coale-Hoover Model, etc.) Fourthly, the author seems to have missed, perhaps inadvertently, the inclusion of eradication of illiteracy and education as an important element in his action program for fertility reduction, though he has dealt with this aspect in other contexts. The author would certainly be aware of many studies which have shown a close relationship between small family size and literacy and education. Finally, some more discussion regarding the sociological aspects of religion and caste in relation to fertility differentials would enhance the value of this work as an interdisciplinary treatise.

Despite the above shortcomings, there is no doubt that Pethe's book represents a milestone in the literature on the population problem and policy vis-a-vis social change in the Third World Countries and India. His scholarly and reflective book-length discussion of coercion in FP is pioneering and original—indeed the first of its kind the world over. As a result, it is a book, to use Bacon's words, not just to be tasted or swallowed, but to be chewed and digested. It is rich in erudition as also in wisdom. It evinces compassion for the illiterate and the poor masses, and exposes the hypocrisy and egocentric thinking of the elite, especially the academia of the ivory towers. But compassion for the poor has not affected his razor-edge logical reasoning and depth of analysis. In any case, the book has enough substance to provoke, to give a jolt and to set one thinking.

From the point of view of presentation, the author has the gift of a unique style. He is merciless (without being malevolent), when he criticizes his opponents. He is fierce, when he exposes vested interests concealed in an apparently valid argument. He is persuasive, when he wants to carry a point. He is convincing, when he adduces irrefutable evidence or makes cold logical reasoning to support his argument. He is innovative, when gaps need to be filled in content or method.

The book has reproduced verbatim the original texts of the otherwise inaccessible official documents (e.g. Maharashtra's Bill on Compulsory Sterilization) with the author's commentary thereon, has an extensive bibliography, and is reasonably priced. The book is not meant only for the elite. It should, therefore, be translated in Indian languages for wider dissemination and debate.

# THE CONTRADICTIONS OF FOREIGN AID

By McNeill Desmond published by Croom Helm, London, 1981, £ 10.95 (Hard Cover)

*Reviewed by* Rameshwar Tandon, Institute for Social and Economic Change, Bangalore—560 072 (India)

In the 1980s, the North-South terminology has become symbolic of a wide gap existing between the rich and the poor. While we have it from the experience of the last two decades that the gap between rich and the poor has been widening, now this is closely interrelated with the issue of assuring the humanity an opportunity of survival with dignity in the 1980s.

The Brandt Commission report gives to the issue of massive transfer of resources a place of prime importance; it also chose the strategy of aid from among the much discussed options of 'trade or aid' and 'aid with trade'. But what the South needs is the strategy trade and aid much more than of either trade or aid.

Desmond McNeill, of the University College, London, in this book looks at how the development aid really works in practice. While the stated purpose of foreign aid is to assist the poor LDCs, the problem of donors is shown how to spend what little they have. It is also true that the aid process itself is so lengthy and complex that their effects are usually counterproductive.

In this context, it is important to distinguish clearly between what the donor countries do and why they do; and what they would do if they acted in their national interest. Since the governments have mixed motives the donors also have fears about the incompetence or corruption of the recipient governments.

The aid process should be such as to allow resources to flow from one group of people to another group. Rather unhappy compromise of interests is that the recipients could take several of the decisions; in practice the donors retain control by a set of procedures and regulations. But the donors are not yet prepared to transfer full control over the allocation of aid resources to the recipients.

Various motives for exerting leverage are suggested, e.g. self-interest, concern with the people of the recipients, stimulating good management on the part of the recipients. While nations may seek a 'quid pro quo' of a different kind, it causes the recipient country to act as required. More important is the leverage at the project level, though the exercise of leverage to discriminate between sectors, regions, projects in the interests of donors leads to various distortions and wastage of resources.

The leverage of good management is most strongly associated with the IMF; that the policies it requires countries to follow are the same and also that they are concerned solely with the growth and not with the distribution of its benefits. But it is crystal clear now that the IMF help is 'conditional' and is tied to the acceptance of some specified norms e.g. the removal of subsidies, raising interest rates, reducing public expenditure.

As for motives and self-interests, we are are told that the politicians from the donor countries are not interested in foreign aid. Also that such self-interested concerns by those in power have led to some of the more stark failures in development aid. Then different parties involved in the aid process are influenced by the interests which are on occasion conflicting.

## INDIA'S EXPORT STRATEGY

By P. N. Agarwala; published by Vikas Publishing House, New Delhi, 1978; 384 pp.; Rs. 65/-

*Reviewed by* Rameshwar Tandon, Institute for Social and Economic Change, Bangalore—560 072 (India)

Professor P. N. Agarwala, in this study, looks at various facets of India's export economy; he draws on his vast experience of three decades in various world commodity markets. Here the focus is on 'practicing' approach with a systematic attempt to study the commodity, country, regional marketing strategies along with various new elements of strategy required by the Third World countries in the 1980s.

He also looks at the available infrastructure like banking, insurance, shipping and credit etc. Agarwala tells us that the prime requisite to win the battle on export front is the creation of a sense of consciousness. Various global shifts and trends in the OECD countries provide a unique opportunity. Then various export commodities are analysed in a global setting. Only later he looks at various documentation procedures and formalities—banking, shipping, quality control, import replenishment, duty draw-back, etc.

In the first decade of independence, emphasis was on 'free' import of all types of goods under OGL and no effective programme of export promotion was there. Even in the second decade major focus was on import substitution, along with various incentive measures for exports, e.g. subsidies and export assistance. Over the years, major changes were observed in respect of value, composition and direction. And from 1973 onwards, massive deficit of over eleven hundred crores per annum was observed. About ten years ago, Tea, Jute and Textiles provided more than half of the Indian export earnings. The changes in commodity composition were brought about due to industrial development as also due to labour-intensive nature of several items.

Still in the area of marketing, a lot remains to be done as there are few Indian export houses with world-wide network. Hence the need to have a long-term export policy so that export markets could be nurtured on a sustained basis. The export effort should try to guarantee supply to cover investment as well as interest payments amortization of debts. Then follow useful suggestions of joint ventures turn-key projects, subcontracting and construction projects.

The next section gives an overview of regional export marketing strategies for trading with the USA, Canada, Latin America, Western Europe, Gulf countries, Eastern Europe, Japan, Asian countries, etc.

In section 3, Agarwala is at his best when he gives indepth analysis of several export items e.g. tea, coffee, spices, fresh fruits, vegetables, engineering goods, readymade garments, sugar, leather and leather manufactures, chemicals, gems and jewellery and marine products. Various promotional measures for major export commodities are suggested. Also that the export realization from packeted tea alone could rise by over 50 per cent. Moreover, aggressive diversification needs to be done in the North American, West European, Australian markets. But very little has been done to improve the quality of exportable teas, as also scant record of replantation. The manufacture of instant coffee needs priority due to higher unit value realization. In case of fruits, and vegetables, India is fortunately placed from natural resources' view. Production of coir is about half of the world's total. The world exports of engineering goods have been rising at more than 10 per cent per annum—that is higher than the overall rate of 8 per cent for all the items. There has been phenomenal rise in case of readymade garments, jute goods, silk and leather manufactures, jewellery etc.

Agarwala reminds us that pricing is determined by costs, competition and demand. The taste of foreign markets, customs, cultural environment and fiercely competitive spirit, have to be understood. The export sales to these markets cannot be 'one-shot' operation but have to be built up on a long-range strategy. The logistics implies the optimal management of flow of goods in materials from the production base to final consumers. The challengers of international market place have yet to be faced and for this, technological changes in the areas of production, packing, transport, have to be pursued vigorously. "If we grasp the opportunities and turn them to our advantage, we may yet be able to break the barriers of stagnation and usher in a period of more rapid growth."

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# APPROACHING INTERNATIONAL CONFERENCES AND SEMINARS

## EIGHTH WORLD CONGRESS OF THE INTERNATIONAL ECONOMIC ASSOCIATION

*Date*: 1–5 December 1986
*Venue*: New Delhi, India
*Topic*: "The Balance Between Industry and Agriculture in Economic Development"
*Contact*: Professor Kenneth J. Arrow
IEA President
Department of Economics
Stanford University
*Stanford*, California 94305, USA

## FOURTH WORLD CONGRESS OF SOCIAL ECONOMICS

*Date*: August 1986
*Venue*: Toronto (Canada)
*Topic*: "The Way Forward"
*Contact*: Professor Barrie O. Pettman
Director, International Institute of Social Economics
Enholmes Hall
Patrington
*Hull*, N. Humberside, England HU12 OPR

## AMERICAN ECONOMIC ASSOCIATION MEETING

*Date*: December 28–30, 1985
*Venue*: New York, N.Y., USA
*Write to*: Alice M. Rivlin
The Brookings Institution
1775 Mass. Ave.,
NW, Washington, D.C. 20036, USA

## INTERNATIONAL CONFERENCE ON THE ECONOMICS OF ENVIRONMENTAL PROTECTION

*Date*: Spring 1985
*Venue*: Mexico
*Contact*: Professor Hayens, C. Goddard
Department of Economics
University of Cincinati
*Cincinati*, OH 4521, USA

## ANNUAL MEETING OF SOUTHERN ECONOMIC ASSOCIATION

*Date*: November 24–26, 1985
*Venue*: Hyatt Regency
Dallas, Dallas TX, USA

## THIRD WORLD CONGRESS FOR SOVIET AND EAST EUROPEAN STUDIES

*Date*: Oct. 30 to November 4, 1985
*Venue*: Sherton Washington Hotel
Washington, D.C.
*Write to*: Professor Donald W. Treadgold
School of International Studies
Seattle, WA 981 95, USA

## NINETEENTH CONFERENCE OF INTERNATIONAL ASSOCIATION OF AGRICULTURAL ECONOMISTS

*Date*: August 26 to September 4, 1985
*Venue*: Malaga, Spain

## INTERNATIONAL ASSOCIATION OF ENERGY ECONOMISTS SEVENTH ANNUAL CONFERENCE

*Date*: June 3 to 5, 1985
*Venue*: Bonn, F. R. Germany
*Topic*: Energy and Economy—Global Interdependencies

## FIFTH WORLD CONGRESS OF THE ECONOMETRIC SOCIETY

*Date*: August 17–24, 1985
*Venue*: Massachusetts Institute of Technology
*Contact*: Truman Bewley
Chairman of the Programme Committee
Cowles Foundation
Box 2125, Yale Station
New Haven, CT 06520, USA

## ARNE RYDE SYMPOSIUM

*Theme*: Incentive Mechanisms and Incentive Problems in Some Major Economic Systems
*Contact*: Claudio Vedovata
Dept. of Economics
Box 5137, 5–220 05
Lund, Sweden

# EIGHTH WORLD CONGRESS OF THE INTERNATIONAL ECONOMIC ASSOCIATION

## New Delhi, India, 1–5 December 1986

## "THE BALANCE BETWEEN INDUSTRY AND AGRICULTURE IN ECONOMIC DEVELOPMENT"

At the invitation and with the support of the Indian Economic Association, the Eighth IEA World Congress is scheduled to be held in New Delhi, India, on 1–5 December 1986. The scientific program is being prepared by an international Program Committee chaired by the IEA President, Kenneth J. Arrow, and composed as follows: Sukhamoy Chakravarty, IEA, Vice President and Vice Chairman of the Congress, Department of Economics, Delhi University, India; Irma Adelman, Department of Agricultural and Resource Economics, University of California, USA; P. R. Brahmananda, Department of Economics, Bombay University, India, Béla Csikos-Nagy, President of the Hungarian Economic Association, Budapest, Hungary; Shigeru Ishikawa, Aoyama Gakuin University, Japan; Nurul Islam, Assistant Director General, Economic and Social Policy Department, FAO; Bruce Johnston, Food Research Institute, Stanford University, USA; Paolo Sylos Labini, Instituto di Economia, Università degli Studi di Roma, Italy.

In addition to one or two general sessions, at which major overview addresses will be arranged, seventeen sessions will be organized as per the outline given below.

*All those interested in presenting a paper are requested to submit their proposal together with an abstract thereof to Professor Kenneth J. Arrow, IEA President, Department of Economics, Stanford University, Stanford, California, 94305, USA.*

### PROGRAM OUTLINE

### 1. Sector Proportions and Economic Development Theory and Cross-Section Comparisons

What are the differing ratios of agriculture to industry across low-income countries? What is the theoretical understanding of these ratios as economies move into different stages of development?

### 2. Sector Proportions and Economic Development: Country Experiences

This session should deal with the historical experience of specific countries or groups of countries, such as East Asian, African, Latin American, and South Asian.

### 3. Agriculture and Industry in Socialist Experience

The experiences of the Soviet Union, the Chinese People's Republic, and Eastern Europe could be studied in this session.

### 4. Overall Growth Rates and Sector Growth Rates

How do differing relative growth rates for agriculture and industry affect the overall growth rate? For example, to what extent is food supply a bottleneck to industrial growth? This session is designed to take a global view of problems which will be studied in more detail in other sessions.

### 5. Effects of Sector Growth Rates on Real Magnitudes

What are the effects of varying the relative rates of growth of the two sectors on infrastructure, energy usage, incremental capital-output ratio, and environmental effects of land use and pollution?

### 6. Technological Interdependence between Agriculture and Industry

What are the technological linkages between the two sectors, the possibilities of technological transfer (e.g. the "green revolution"), similarities and differences in production structures, and profit and surplus rates.

### 7. The Effects on Social Justice

What are the effects of differing relative sector growth rates and agrarian reform on poverty, income distribution, and relative wages in the different sectors?

### 8. Relative Price Movements in Agriculture and Industry

Internal terms of trade: fixed price in industry versus flexible agricultural prices, incentives for agricultural supply (credit versus prices); effects of domestic supply shocks, wage indexation, and inflation; self-consumption versus market agriculture.

### 9. Resource Transfer Across Sectors

Effects of terms of trade, public policy, and private reinvestment of surplus from one sector to another; generation of savings in different sectors; monetary and fiscal policies and consequences.

### 10. Labour Allocation

Rural labour markets (share cropping, resident labourers and daily workers); labour migration between sectors, both quantitative and qualitative; rural/urban wage differentials and minimum wage legislation; transition from "unlimited" to "limited" labour supplies.

### 11. World Trade and Agricultural/Industrial Balance

Effects on balance of payments of different relative sector growth rates, within agriculture as well as between agriculture and industry; trends and future prospects of international commodity prices and world interest rates and their implications.

### 12. Effects of Sectoral Shifts on Social Variables

Effects on wants, population, and administrative, political, and institutional requirements.

### 13. Protection of Agricultural and Industrial Products

Effects of and on differential growth rates for specific agricultural and industrial products; control versus liberalization in agricultural products.

### 14. Economic Organization in the Rural Areas

Role of large scale agri-businesses and small scale farms; large versus small farms; credit and marketing; implications for fuller resource utilization and incentive for innovation in agriculture.

### 15. Industrialization in Primary Export Economies

The special problems of sparsely populated mono-cultural countries; changing export base in response to changing international trade patterns; import substitution versus export promotion strategies for industrialization; effects of marketing boards in redirecting resource flows.

### 16. Agriculture and Industry in the History of Economic Thought

The concepts of the leading economists from Adam Smith on: institutional factors and the market.

### 17. Demographic Policy and the Balance between Agriculture and Industry

What are the implications of demographic policy for sectoral balance? What are the implications of differing sectoral growth rates towards the need for and feasibility of demographic policy?

In addition, a number of parallel sessions will be held on specific problems of the Indian Economy. These will be directly organized by the Indian Economic Association.

REQUESTS FOR INFORMATION SHOULD BE ADDRESSED TO:
INTERNATIONAL ECONOMIC ASSOCIATION
23, Rue Campagne Premiere
75014 PARIS, FRANCE

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# JAPAN:
## AN INTERNATIONAL COMPARISON

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### TABLE 1
### CURRENT AND TRADE BALANCES (1974–1982)

(US $ million)

| | Current Balance | | | | | | Trade Balance | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Japan | U.S.A. | Germany F.R. | France | U.K. | Italy | Japan | U.S.A. | Germany F.R. | France | U.K. | Italy |
| 1974 | **−4,693** | 2,124 | 10,330 | −5,845 | −7,908 | −8,041 | **1,436** | −5,343 | 20,720 | −4,298 | −12,518 | −8,508 |
| 1975 | **−682** | 18,280 | 4,180 | −6 | −3,806 | −561 | **5,028** | 9,047 | 15,920 | 997 | −7,463 | −1,144 |
| 1976 | **3,680** | 4,384 | 3,910 | −5,886 | −1,890 | −2,847 | **9,887** | −9,306 | 15,180 | −4,592 | −7,011 | −4,240 |
| 1977 | **10,918** | −14,068 | 4,260 | −2,982 | −308 | 2,480 | **17,311** | −30,873 | 18,410 | −2,709 | −3,927 | −129 |
| 1978 | **16,534** | −14,259 | 9,500 | 3,790 | 1,366 | 9,124 | **24,596** | −33,759 | 23,310 | 716 | −3,024 | 2,908 |
| 1979 | **−8,754** | 1,414 | −7,240 | 1,200 | −1,986 | 5,414 | **1,845** | −27,346 | 14,900 | −2,305 | −7,317 | −990 |
| 1980 | **−10,746** | 1,520 | −15,702 | −4,209 | 6,814 | −9,801 | **2,125** | −25,338 | 4,922 | −13,418 | 2,868 | −16,417 |
| 1981 | **4,770** | 4,471 | −6,501 | −4,809 | 12,088 | −8,672 | **19,967** | −27,889 | 12,265 | −9,971 | 5,820 | −10,942 |
| 1982 | **6,896** | −8,093 | 3,324 | — | −6,911 | — | **−18,191** | −36,113 | 21,131 | −15,822 | 3,900 | — |

Source: MITI, White Paper on International Trade, 1981, 1982, 1983.

### TABLE 2
### JAPAN'S INTERNATIONAL BALANCE OF PAYMENTS—IMF BASIS (1974–1983)

(US $ million)

| | Current balance | | | | | | Long-term capital | Basic balance | Short-term capital | Errors and omissions | Overall Balance |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Current Balance | Trade balance | | | Services | Transfers | | | | | |
| | | Balance | Exports | Imports | | | | | | | |
| 1974 | **−4,693** | 1,436 | 54,480 | 53,044 | −5,842 | −287 | −3,881 | −8,574 | 1,778 | −43 | **−6,839** |
| 1975 | **−682** | 5,028 | 54,734 | 49,706 | −5,354 | −356 | −272 | −954 | −1,138 | −584 | **−2,676** |
| 1976 | **3,680** | 9,887 | 66,026 | 56,139 | −5,867 | −340 | −984 | 2,696 | 111 | 117 | **2,924** |
| 1977 | **10,918** | 17,311 | 79,333 | 62,022 | −6,004 | −389 | −3,184 | 7,734 | −648 | 657 | **7,743** |
| 1978 | **16,534** | 24,596 | 95,634 | 71,038 | −7,387 | −675 | −12,389 | 4,145 | 1,538 | 267 | **5,950** |
| 1979 | **−8,754** | 1,845 | 101,232 | 99,387 | −9,472 | −1,127 | −12,618 | −21,372 | 2,377 | 2,333 | **−16,662** |
| 1980 | **−10,746** | 2,125 | 126,736 | 124,611 | −11,343 | −1,528 | 2,394 | −8,352 | 3,071 | −3,115 | **−8,396** |
| 1981 | **4,770** | 19,967 | 149,522 | 129,555 | −13,573 | −1,624 | −6,449 | −1,679 | −958 | 493 | **−2,144** |
| 1982 | **6,850** | 18,079 | 137,663 | 119,584 | −9,848 | −1,381 | −14,969 | −8,119 | −1,579 | 4,727 | **−73** |

Source: Bank of Japan, Balance of Payments Monthly.

## TABLE 3

## JAPAN'S INVISIBLE TRADE ACCOUNT (1980–1982)

(US $ million)

| | | 1980 | 1981 | 1982 |
|---|---|---|---|---|
| Transportation | Credit | 12,991 | 15,356 | 13,308 |
| | Debit | 17,334 | 18,516 | 16,729 |
| | **Balance** | **–4,343** | **–3,160** | **–3,421** |
| Travel | Credit | 644 | 735 | 754 |
| | Debit | 4,593 | 4,616 | 4,116 |
| | **Balance** | **–3,949** | **–3,881** | **–3,362** |
| Investment Income | Credit | 11,115 | 15,761 | 18,320 |
| | Debit | 10,261 | 16,524 | 16,602 |
| | **Balance** | **854** | **–763** | **1,718** |
| Other | Credit | 6,749 | 7,931 | 8,703 |
| | Debit | 10,654 | 13,700 | 13,486 |
| | **Balance** | **–3,905** | **–5,769** | **–4,783** |
| Total | Credit | 31,499 | 39,783 | 41,085 |
| | Debit | 42,842 | 53,356 | 50,933 |
| | **Balance** | **–11,343** | **–13,573** | **–9,848** |

Source: Bank of Japan, Balance of Payments Monthly, March 1983.

## TABLE 4

## JAPAN'S LONG-TERM CAPITAL ACCOUNT (1980–1982)

(US $ million)

| | 1980 | 1981 | 1982 |
|---|---|---|---|
| Direct Investment[1] | 2,385 | 4,894 | 4,540 |
| Trade Credit[1] | 717 | 2,731 | 3,239 |
| Loans[1] | 2,553 | 5,083 | 7,902 |
| Securities[1] | 3,753 | 8,777 | 9,743 |
| Others[1] | 1,409 | 1,324 | 1,994 |
| **Assets, Total[1] [A]** | **10,817** | **22,809** | **27,418** |
| Direct Investment[2] | 278 | 189 | 439 |
| Trade Credit[2] | –16 | –15 | –6 |
| Loans[2] | –231 | –186 | –181 |
| Securities[2] | 11,947 | 15,075 | 7,579 |
| External Bonds[2] | 1,236 | 1,368 | 4,281 |
| Others[2] | –3 | –71 | 337 |
| **Liabilities, total[2] [B]** | **13,211** | **16,360** | **12,449** |
| **Balance [B – A]** | **2,394** | **–6,449** | **–14,969** |

[1] Plus shows an increase in assets (capital outflow), minus shows a decrease in assets (Capital inflow).

[2] Plus shows an increase in liabilities (capital inflow), minus shows a decrease in liabilities (Capital outflow).

Source: Bank of Japan, Balance of Payments Monthly, March 1983.

## TABLE 5

## INTERNATIONAL RESERVES (End of 1982)

(US $ million)

| | Total | Gold[1] | SDRs[2] | IMF Position | Foreign Exchange |
|---|---|---|---|---|---|
| Germany, F.R. | 48,436 | 3,675 | 2,054 | 3,088 | 39,620 |
| U.S.A.[3] | 33,958 | 10,194 | 5,250 | 7,348 | 10,211 |
| **Japan[4]** | **23,262** | **935** | **2,091** | **2,071** | **19,172** |
| France | 19,690 | 3,160 | 979 | 958 | 15,594 |
| Switzerland | 18,675 | 3,215 | 4 | 515 | 14,941 |
| U.K.[5] | 16,997 | 734 | 1,170 | 1,553 | 9,673 |
| Italy | 16,683 | 2,574 | 785 | 696 | 12,629 |
| Canada | 3,793 | 782 | 71 | 365 | 2,575 |
| E.C. | 119,983 | 13,236 | 6,880 | 7,468 | 92,396 |
| Oil Exporting Countries | 84,982 | 1,622 | 2,292 | 7,420 | 73,649 |
| **Free World, total** | **395,019** | **35,905** | **19,358** | **28,076** | **311,680** |

[1] One troy ounce is evaluated as 35 SDRs.

[2] Special Drawing Rights 1 SDR = US $ 1.10311.

[3] Based on Federal Reserve Bulletin.

[4] Based on data of Ministry of Finance, Japan.

[5] Based on Financial Statistics.

Source: IMF, International Financial Statistics.

## TABLE 6

## TOTAL NET FLOW OF RESOURCES FROM DAC COUNTRIES TO DEVELOPING COUNTRIES AND MULTILATERAL AGENCIES (1980–1981)

(US $ million)

| | 1980 | 1981 | % of GNP 1981 |
|---|---|---|---|
| U.S.A. | 13,852 | 26,375 | 0.90 |
| **Japan** | **6,815** | **12,231** | **1.09** |
| France | 11,631 | 11,469 | 2.01 |
| U.K. | 11,988 | 10,114 | 2.01 |
| Germany, F.R. | 10,633 | 8,087 | 1.18 |
| Canada | 3,482 | 4,100 | 1.50 |
| Italy | 4,009 | 3,714 | 1.07 |
| Belgium | 2,896 | 2,830 | 2.93 |
| Switzerland | 2,705 | 2,292 | 2.35 |
| Netherlands | 2,366 | 2,211 | 1.59 |
| Sweden | 1,868 | 1,463 | 1.32 |
| Australia | 883 | 827 | 0.53 |
| **DAC, total** | **75,352** | **88,040** | **1.21** |

Source: OECD, Development Cooperation, 1982.

## TABLE 7

## THE 12 DEVELOPING COUNTRIES WITH THE LARGEST DEBT SERVICE PAYMENTS (1979–1982)[1]

(US $ billion, except as indicated)

| | Debt service paid | | | | Disbursed debt (at year-end) | | | Total reserves (at year-end) | | GNP Growth rate 1970–1980 (% per annum) | GNP Per capita 1980 (US$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1979 | 1980 | 1981 | **1982** | 1980 | 1981 | **1982** | 1979 | 1981 | | |
| Brazil | 11.4 | 13.7 | 17.3 | **18.5** | 57.0 | 65.6 | **85.5** | 9.0 | 6.7 | 8.7 | 2,050 |
| Mexico | 11.4 | 9.3 | 13.4 | **15.2** | 43.5 | 54.4 | **80.1** | 2.2 | 4.2 | 5.4 | 2,135 |
| Venezuela | 2.8 | 4.7 | 6.0 | **7.8** | 14.7 | 14.9 | **29.5** | 7.8 | 8.7 | 4.8 | 3,631 |
| Spain | 3.0 | 3.7 | 5.0 | **5.7** | 20.7 | 25.1 | — | 13.9 | 11.4 | 3.7 | 5,345 |
| Algeria | 3.2 | 3.9 | 4.4 | **4.8** | 17.2 | 17.0 | **16.3** | 2.9 | 3.9 | 5.9 | 1,924 |
| Iran | 2.0 | 2.0 | 6.1 | **4.0** | 10.3 | 6.0 | — | 15.4 | 3.5 | 2.9 | 1,937 |
| Yugoslavia | 2.7 | 3.3 | 4.2 | **4.7** | 15.1 | 16.8 | — | 1.3 | 1.7 | 6.2 | 2,623 |
| Korea, Rep. of | 2.9 | 3.3 | 4.0 | **4.8** | 17.6 | 20.8 | **36.0** | 3.0 | 2.7 | 8.1 | 1,523 |
| Argentina | 2.1 | 2.8 | 3.7 | **4.9** | 15.6 | 20.0 | **38.0** | 9.6 | 3.4 | 2.5 | 2,395 |
| Saudi Arabia | 2.9 | 3.1 | 3.4 | **3.3** | 3.3 | 3.5 | — | 19.5 | 32.4 | 13.6 | 11,265 |
| Chile | 1.7 | 2.2 | 3.1 | **3.3** | 9.0 | 12.3 | **17.2** | 2.0 | 3.3 | 3.9 | 2,160 |
| Indonesia | 2.2 | 2.0 | 2.7 | **3.4** | 16.6 | 18.2 | **25.4** | 4.1 | 5.1 | 7.0 | 422 |

[1] Ranked by average debt service in 1980–1981.

[2] Based on Morgan Guaranty Trust Co., *World Financial Markets.*

Source: OECD, External Debt of Developing Countries, 1982.

## TABLE 8

## NET OFFICIAL DEVELOPMENT ASSISTANCE FROM DAC COUNTRIES TO DEVELOPING COUNTRIES AND MULTILATERAL AGENCIES: NET DISBURSEMENTS (1970–1982)[1]

(US $ million, except as indicated)

| | 1970–72 Average | 1978 | 1979 | 1980 | 1981 | 1982 | % of GNP | | | Share of Total % | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1970–72 | 1981 | 1982 | 1970–72 | 1981 | 1982 |
| U.S.A. | 3,408 | 5,663 | 4,684 | 7,138 | 5,782 | 8,302 | 0.32 | 0.20 | 0.27 | 43.1 | 22.6 | 29.7 |
| France | 1,222 | 2,705 | 3,449 | 4,162 | 4,177 | 3,991 | 0.67 | 0.73 | 0.74 | 14.2 | 16.3 | 14.3 |
| Germany, F.R. | 714 | 2,347 | 3,393 | 3,567 | 3,181 | 3,163 | 0.32 | 0.47 | 0.48 | 9.0 | 12.4 | 11.3 |
| **Japan** | **527** | **2,215** | **2,685** | **3,353** | **3,171** | **3,023** | **0.21** | **0.28** | **0.29** | 6.7 | **12.4** | **10.8** |
| U.K. | 595 | 1,465 | 2,157 | 1,852 | 2,194 | 1,794 | 0.42 | 0.44 | 0.38 | 7.5 | 8.6 | 6.4 |
| Netherlands | 240 | 1,074 | 1,472 | 1,630 | 1,510 | 1,473 | 0.63 | 1.08 | 1.08 | 3.0 | 5.9 | 5.3 |
| Canada | 398 | 1,060 | 1,056 | 1,075 | 1,189 | 1,185 | 0.42 | 0.43 | 0.42 | 5.0 | 4.6 | 4.2 |
| Sweden | 158 | 783 | 988 | 962 | 919 | 987 | 0.44 | 0.83 | 1.02 | 2.0 | 3.6 | 3.5 |
| Italy | 144 | 376 | 273 | 683 | 666 | 820 | 0.14 | 0.19 | 0.24 | 1.8 | 2.6 | 2.9 |
| Australia | 236 | 588 | 629 | 667 | 649 | 882 | 0.60 | 0.41 | 0.57 | 3.0 | 2.5 | 3.2 |
| **DAC, Total** | **7,903** | **19,992** | **22,820** | **27,264** | **25,636** | **27,919** | **0.35** | **0.35** | **0.39** | **100.0** | **100.0** | **100.0** |

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[1] The Development Assistance Committee (DAC) is one of the Specialised Committees of the OECD. *DAC members include Austria, Belgium, Denmark, Finland, New Zealand, Norway, Switzerland and the Commission of EEC as well as countries shown above.*

Source: OECD, *Development Cooperation 1982* and *Press Release*, May 30, 1983.

## TABLE 9

## JAPAN'S DIRECT OVERSEAS INVESTMENT (FY 1951–1982)[1]

| | No. of cases | Amount (US$ million) |
|---|---|---|
| 1951–1968 | 2,460 | 2,007 |
| 1969 | 544 | 665 |
| 1970 | 729 | 904 |
| 1971 | 904 | 858 |
| 1972 | 1,774 | 2,338 |
| 1973 | 3,093 | 3,494 |
| 1974 | 1,911 | 2,395 |
| 1975 | 1,591 | 3,280 |
| 1976 | 1,652 | 3,462 |
| 1977 | 1,761 | 2,806 |
| 1978 | 2,393 | 4,598 |
| 1979 | 2,694 | 4,995 |
| 1980 | 2,442 | 4,693 |
| 1981 | 2,563 | 8,931 |
| 1982 | 2,552 | 7,703 |
| **Total** | **29,063** | **53,131** |

[1] Figures are based on accumulated value of approvals and notification.

Source: Ministry of Finance, Japan.

## TABLE 10

## JAPAN'S DIRECT OVERSEAS INVESTMENT BY COUNTRY[1]

| As of March 31, 1983 | Amount (US$ million) |
|---|---|
| U.S.A. | 13,970 |
| Indonesia | 7,268 |
| Brazil | 3,545 |
| Australia | 2,882 |
| U.K. | 2,296 |
| Panama | 2,022 |
| Hong Kong | 1,825 |
| Liberia | 1,692 |
| Singapore | 1,383 |
| Korea, Rep. of | 1,312 |
| Canada | 1,255 |
| Saudi Arabia/Kuwait | 1,113 |
| Mexico | 1,042 |
| Iran | 1,002 |
| Germany, F.R. | 808 |
| Malaysia | 764 |

[1] Figures are based on accumulated value of approvals and notifications.

Source: Ministry of Finance, Japan.

## TABLE 11
## JAPAN'S DIRECT OVERSEAS INVESTMENT BY REGION AND INDUSTRY (As of March 31, 1983)

| | North America | | Latin America | | Asia | | Middle East | | Europe | | Oceania and Africa | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. of cases | Amount (US$ million) | No. of cases | Amount (US$ million) | No. of cases | Amount (US$ million) | No. of cases | Amount (US$ million) | No. of cases | Amount (US$ million) | No. of cases | Amount (US$ million) | No. of cases | Amount (US$ million) |
| Iron & Non-Ferrous Metals | 100 | 435 | 83 | 1,037 | 510 | 1,487 | 10 | 59 | 295 | 171 | 109 | 420 | 1,107 | 3,608 |
| Chemicals | 151 | 384 | 112 | 521 | 637 | 990 | 21 | 1,009 | 68 | 158 | 26 | 115 | 1,015 | 3,176 |
| Electrical Machinery | 301 | 1,141 | 105 | 273 | 859 | 643 | 5 | 12 | 87 | 226 | 18 | 26 | 1,375 | 2,322 |
| Textiles | 115 | 217 | 142 | 372 | 635 | 1,002 | 3 | 4 | 81 | 156 | 58 | 45 | 1,034 | 1,795 |
| Transportation Machinery | 59 | 614 | 42 | 488 | 180 | 350 | 5 | 4 | 15 | 115 | 17 | 250 | 318 | 1,822 |
| General Machinery | 294 | 417 | 111 | 296 | 545 | 367 | 6 | 10 | 99 | 145 | 21 | 30 | 1,076 | 1,265 |
| Lumber & Pulp | 73 | 426 | 38 | 189 | 252 | 162 | — | — | 1 | 0 | 76 | 122 | 440 | 899 |
| **Manufacturing, total** | **17,17** | **4,250** | **827** | **3,435** | **4,943** | **5,800** | **67** | **1,137** | **780** | **1,181** | **429** | **1,149** | **8,763** | **16,952** |
| Mining | 210 | 776 | 134 | 1,404 | 164 | 5,383 | 9 | 39 | 9 | 859 | 313 | 1,830 | 839 | 10,291 |
| Commerce | 4,188 | 5,332 | 478 | 651 | 1,664 | 652 | 48 | 12 | 1,364 | 1,455 | 374 | 381 | 8,116 | 8,482 |
| Finance and Insurance | 124 | 1,546 | 92 | 470 | 182 | 360 | 15 | 50 | 173 | 1,288 | 44 | 88 | 630 | 3,802 |
| Services | 696 | 627 | 126 | 237 | 472 | 1,115 | 12 | 4 | 94 | 125 | 130 | 610 | 1,530 | 2,717 |
| **Total** | **10,594** | **15,225** | **3,427** | **8,852** | **9,344** | **14,552** | **274** | **2,479** | **3,023** | **6,146** | **2,401** | **5,877** | **29,063** | **53,131** |

Source: Ministry of Finance, Japan.

### TABLE 12

### TOTAL ENERGY REQUIREMENTS, PRODUCTION, TRADE AND DEGREE OF DEPENDENCY ON IMPORTS (1981)

(million metric tons of oil equivalent, except %)

| | | Total energy requirements | Production by primary sources | | | | | | Trade | | Degree of dependency on imports $\left(\frac{B-C}{A+B+C}\right)$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total [*A*] | Crude oil and NGL | Solid fuels | Natural gas | Nuclear power | Hydro, geothermal and solar | Imports [*B*] | Exports [*C*] | |
| Japan | 1976 | 348.66 | 47.16 | 0.60 | 14.26 | 2.24 | 8.35 | 21.71 | 316.63 | 0.58 | 87.0% |
| | 1978 | 362.29 | 49.55 | 0.57 | 13.64 | 2.37 | 14.53 | 18.44 | 323.81 | 1.35 | 86.7 |
| | 1980 | 365.13 | 58.73 | 0.55 | 13.19 | 1.97 | 20.24 | 22.78 | 325.87 | 3.37 | 84.6 |
| | **1981** | **362.11** | **59.26** | **0.51** | **12.93** | **1.89** | **21.52** | **22.41** | **314.88** | **3.34** | **84.0** |
| U.S.A. | | 1,768.17 | 1,551.73 | 483.20 | 460.92 | 464.47 | 74.10 | 69.04 | 329.15 | 84.77 | 13.6 |
| Germany, F.R. | | 263.22 | 130.79 | 5.12 | 93.03 | 14.87 | 12.95 | 4.82 | 165.36 | 30.82 | 50.7 |
| Canada | | 224.49 | 238.00 | 74.25 | 27.86 | 65.57 | 8.64 | 61.68 | 37.63 | 49.52 | −5.3 |
| France | | 196.67 | 67.88 | 2.52 | 14.80 | 5.95 | 26.29 | 18.32 | 149.87 | 18.03 | 66.0 |
| U.K. | | 194.54 | 207.30 | 91.35 | 73.24 | 31.84 | 9.52 | 1.35 | 59.60 | 72.03 | −6.4 |
| Italy | | 139.28 | 25.65 | 1.49 | 0.91 | 11.72 | 0.61 | 10.92 | 134.12 | 15.50 | 82.2 |
| **OECD, total** | | **3,661.81** | **2,649.58** | **711.65** | **808.20** | **696.86** | **175.97** | **256.89** | **1,564.23** | **481.20** | **29.0** |

Source: OECD, *Energy Balances of OECD Countries, 1971-81.*

## TABLE 13
## FINAL CONSUMPTION OF TOTAL ENERGY BY SECTOR (1981)

| | | Consumption | | Industry (%) | | | Transportation (%) | | | | Other sectors (%) | | | Non-energy uses[2] (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Total (million metric tons of oil equivalent | Per capita (kg of oil equivalent) | Total | Iron and Steel | Chemical and petro-chemicals | Total | Road | Rail | Air | Total | Agriculture | Residential | |
| Japan | 1980 | 261.25 | 2,237 | 53.4 | 16.2 | 14.5 | 18.6 | 14.2 | 1.1 | 1.0 | 24.6 | 1.3 | 20.8 | 3.4 |
| | **1981** | **254,50** | **2,163** | **52.0** | **15.0** | **13.1** | **18.9** | **14.9** | **1.1** | **1.0** | **25.5** | **1.2** | **21.6** | **3.6** |
| U.S.A. | | 1,266.36 | 5,510 | 28.4 | 4.8 | 8.1 | 34.2 | 28.9 | 1.1 | 4.2 | 34.3 | 1.0 | 16.9 | 3.1 |
| Germany, F.R. | | 191.34 | 3,103 | 37.3 | 9.1 | 12.2 | 20.8 | 17.8 | 0.9 | 1.6 | 39.3 | 1.0 | 24.9 | 2.6 |
| Canada | | 155.40 | 6,419 | 36.6 | 4.1 | 6.5 | 26.5 | 18.1 | 1.5 | 2.2 | 33.3 | 2.4 | 15.9 | 3.6 |
| France | | 136.40 | 2,528 | 36.0 | 6.5 | 13.8 | 24.5 | 21.3 | 0.9 | 1.8 | 36.0 | 2.2 | 10.5 | 3.5 |
| U.K. | | 134.51 | 2,409 | 32.5 | 5.6 | 9.8 | 24.2 | 19.1 | 0.8 | 3.5 | 41.0 | 1.0 | 27.1 | 2.3 |
| Italy | | 102.65 | 1,795 | 40.3 | 7.7 | 12.2 | 23.7 | 21.3 | 0.6 | 1.5 | 33.6 | 2.1 | 27.5 | 2.4 |
| **OECD, total[1]** | | **2,602.09** | **3,312** | **34.2** | **6.7** | **9.4** | **28.4** | **23.4** | **1.1** | **3.1** | **34.2** | **1.5** | **19.4** | **3.2** |

[1] The members of OECD are Australia, Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and United States.

[2] Non-energy uses refers to petroleum products such as lubricating oil or asphalt.

Source: *OECD, Energy Balances of OECD Countries, 1971–1981.*

### TABLE 14

### OIL IMPORTS AND CONSUMPTION OF MAJOR COUNTRIES (1980–1982)[1]

(1000 barrels/day, except as indicated)

| | | Imports | | | Exports [B] | Net imports [C=A−B] | Consumption | | Oil import dependency ratio (C/D) | Consumption per real GNP unit (1973=100) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Total [A] | Crude oil | Petroleum products | | | Total [D] | Per capita per day (litre) | | |
| Japan | 1980 | 5,091 | 4,373 | 718 | 9 | 5,082 | 4,674 | 6.4 | 108.7 | 71.9 |
| | 1981 | 4,650 | 3,919 | 731 | 12 | 4,638 | 4,444 | 6.0 | 104.7 | 65.9 |
| | **1982** | **4,455** | **3,643** | **808** | **77** | **4,378** | **4,137** | **5.6** | **105.8** | **59.5** |
| U.S.A. | 1981 | 5,982 | 4,406 | 1,576 | 561 | 5,421 | 16,058 | 11.1 | 33.8 | 77.5 |
| | 1982 | 5,026 | 3,466 | 1,560 | 812 | 4,214 | 15,175 | 10.5 | 27.8 | 74.5 |
| Germany, F.R. | 1981 | 2,272 | 1,591 | 681 | 146 | 2,126 | 2,120 | 5.4 | 100.3 | 67.1 |
| | 1982 | 2,104 | 1,410 | 724 | 185 | 1,919 | 2,050 | 5.2 | 93.6 | 65.5 |
| France | 1981 | 2,177 | 1,804 | 373 | 322 | 1,855 | 1,744 | 5.1 | 106.4 | 64.5 |
| | 1982 | 1,959 | 1,509 | 450 | 244 | 1,715 | 1,632 | 4.8 | 105.1 | 59.4 |
| U.K. | 1982 | 931 | 622 | 309 | 1,071 | −770 | 1,345 | 3.8 | — | 66.0 |
| Italy | 1981 | 2,126 | 1,816 | 310 | 294 | 1,832 | 1,705 | 4.8 | 107.4 | 92.7 |
| Canada | 1981 | 567 | 521 | 46 | 363 | 204 | 1,617 | 10.7 | 12.6 | 81.4 |

[1] Based on CIA, *International Energy Statistical Review*.

Source: Bank of Japan, *Comparative International Statistics*, 1983.

## TABLE 15

## CRUDE OIL: WORLD PRODUCTION AND PROVEN RESERVES BY COUNTRY AND REGION (1981–1982)

| | Production (1,000 barrels/day) | | Proven reserves (End of 1981) | |
|---|---|---|---|---|
| | 1981 | 1982 | (billion barrels) | Years of Reserves[1] |
| **Free World [*A*]** | **41,420** | **38,486** | **554.7** | 39.5 |
| **OPEC Nations[2]** | **22,542** | **18,661** | **413.7** | 60.7 |
| Saudi Arabia | 9,827 | 6,517 | 158.5 | 66.6 |
| Iran | 1,322 | 1,998 | 39.4 | 54.1 |
| Venezuela | 2,108 | 1,891 | 20.2 | 29.2 |
| Indonesia | 1,604 | 1,344 | 10.4 | 20.3 |
| Nigeria | 1,433 | 1,289 | 11.0 | 23.3 |
| United Arab Emirates | 1,513 | 1,229 | 35.5 | 79.1 |
| Libya | 1,104 | 1,203 | 25.9 | 58.9 |
| Iraq | 917 | 914 | 33.7 | 101.0 |
| Kuwait | 1,125 | 820 | 67.7 | 226.1 |
| Algeria | 812 | 775 | 6.9 | 24.5 |
| Qatar | 405 | 331 | 3.4 | 28.5 |
| Ecuador | 211 | 209 | 1.1 | 14.4 |
| Gabon | 151 | 141 | 0.5 | 9.0 |
| **Non-OPEC Nations** | **18,878** | **19,825** | **141.0** | 19.5 |
| U.S.A. | 8,580 | 8,656 | 29.8 | 9.4 |
| Mexico | 2,312 | 2,746 | 48.1 | 48.0 |
| U.K. | 1,811 | 2,062 | 7.6 | 10.2 |
| Canada | 1,285 | 1,453 | 5.5 | 10.3 |
| **Communist Block [*B*]** | **14,596** | **14,705** | **105.5** | 19.6 |
| U.S.S.R. | 12,174 | 12,280 | 85.0 | 19.0 |
| China | 2,012 | 2,040 | 18.5 | 24.8 |
| **World, total [*A* + *B*]** | **56,016** | **53,191** | **660.1** | 34.0 |

[1] Proven reserves at the end of 1981 divided by production in 1981.

[2] OPEC total represents the total of 13 member countries for each year.

Source: Penn Well Publishing Company, *Oil and Gas Journal*, Gulf Publishing Company, *World Oil*.

## TABLE 16

## COAL: PRODUCTION, TRADE AND CONSUMPTION (1981)

(million metric tons)

| | Production | Trade | | Consumption |
|---|---|---|---|---|
| | | Imports | Exports | |
| U.S.A. | 697.6 | 0.9 | 102.1 | 614.2 |
| China | 593.0 | 2.5 | 5.0 | 590.5 |
| U.S.S.R. | 510.0 | 3.0 | 26.0 | 487.0 |
| Poland | 163.0 | 1.1 | 15.1 | 149.1 |
| South Africa | 131.7 | 0.0 | 35.0 | 96.7 |
| U.K. | 127.4 | 4.4 | 9.1 | 118.0 |
| India | 123.1 | 0.6 | 0.2 | 120.2 |
| Germany, F.R. | 95.5 | 10.8 | 11.4 | 91.5 |
| Australia | 80.0 | 0.1 | 50.6 | 32.6 |
| Canada | 21.7 | 14.2 | 15.8 | 19.8 |
| France | 20.3 | 27.5 | 0.7 | 44.5 |
| **Japan** | **17.7** | **78.3** | **0.1** | **96.5** |
| World, Total | 2,742.0 | 260.2 | 277.3 | 2731.0 |

Source: U.N., *Yearbook of World Energy Statistics*, 1981.

## TABLE 17

## ELECTRIC POWER GENERATED (1981)

| | | Total electricity generated [GW-h][1] | Thermal | | | | Nuclear Power (%) | Hydro-geo-thermal and solar (%) |
|---|---|---|---|---|---|---|---|---|
| | | | Total (%) | Solid fuels (%) | Petro-products (%) | Gas (%) | | |
| | 1974 | 459,041 | 65.1 | 6.6 | 55.2 | 3.3 | 4.3 | 18.5 |
| | 1976 | 511,793 | 65.0 | 6.2 | 54.0 | 4.8 | 6.7 | 17.3 |
| Japan | 1978 | 563,990 | 65.1 | 5.5 | 50.0 | 9.6 | 10.5 | 13.3 |
| | 1980 | 577,521 | 65.9 | 6.7 | 38.9 | 14.0 | 14.3 | 16.1 |
| | **1981** | **583,249** | **60.0** | **8.1** | **37.9** | **14.0** | **15.1** | **15.7** |
| U.S.A. | | 2,472,670 | 75.0 | 51.4 | 8.8 | 14.8 | 11.7 | 10.9 |
| Canada | | 383,625 | 20.6 | 15.9 | 2.6 | 2.1 | 9.6 | 68.7 |
| Germany, F.R. | | 368,810 | 80.0 | 61.9 | 5.4 | 12.7 | 14.5 | 5.4 |
| U.K. | | 277,735 | 84.4 | 74.5 | 9.4 | 0.5 | 13.7 | 1.9 |
| France | | 276,100 | 35.4 | 21.8 | 11.6 | 2.0 | 38.1 | 26.5 |
| Italy | | 181,656 | 71.9 | 12.4 | 54.7 | 4.8 | 1.5 | 26.6 |
| OECD, Total | | **5,323,936** | **63.9** | **39.2** | **14.0** | **10.7** | **13.3** | **20.5** |

[1] GW(gigawatt) = 1 billion watts.

Source: OECD, *Energy Balances of OECD Countries, 1971–1981.*

## TABLE 18

## NATURAL RESOURCES—OVERSEAS DEPENDENCY AND WORLD TRADE SHARE BY SELECTED COUNTRIES (1981)

| | Degree of overseas dependency[1] (%) | | | | | Share in world trade[5] (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Japan** | U.S.A. | Germany, F.R. | France | U.K. | **Japan** | U.S.A. | Germany, F.R. | France | U.K. |
| Energy[2] | **84.8[3]** | 15.3[4] | 56.6[4] | 80.9[4] | 4.0[4] | **13.4[4]** | 19.0[4] | 7.6[4] | 7.1[4] | 3.4[4] |
| Coal | **83.4[3]** | −13.0[4] | −3.6[4] | 60.5[4] | 2.6[4] | **26.3[4]** | 0.7[4] | 3.8[4] | 12.1[4] | 2.0[4] |
| Oil | **99.8[3]** | 36.7[4] | 95.4[4] | 98.8[4] | 7.0[4] | **14.1[4]** | 18.8[4] | 6.4[4] | 7.3[4] | 3.5[4] |
| Natural Gas | **90.9[3]** | 4.6[4] | 69.8[4] | 72.3[4] | 24.0[4] | **10.4[4]** | 19.2[4] | 20.5[4] | 9.5[3] | 4.9[4] |
| Iron ore | **99.6** | 29.2 | 96.5 | 99.6 | 88.9 | **41.1[4]** | 10.9[4] | 16.6[4] | 5.5[4] | 3.3[4] |
| Copper | **95.9** | 24.3 | 99.8 | 100.0 | 99.8 | **23.4[4]** | 11.3[4] | 13.4[4] | 8.8[4] | 7.2[4] |
| Lead | **87.7** | 59.7 | 91.3 | 90.9 | 99.1 | **6.6[4]** | 5.8[4] | 13.4[4] | 5.6[4] | 26.2[4] |
| Zinc | **65.4** | 58.8 | 70.3 | 86.3 | 94.1 | **9.0[4]** | 18.2[4] | 12.9[4] | 10.5[4] | 7.3[4] |
| Tin | **98.0** | 100.0 | 100.0 | 100.0 | 64.2 | **21.2[4]** | 31.7[4] | 12.2[4] | 7.5[4] | 4.5[4] |
| Aluminium | **100.0** | 64.1 | 100.0 | −239.2 | 100.0 | **20.0[4]** | 15.9[4] | 14.8[4] | 8.4[4] | 4.0[4] |
| Nickel | **100.0** | 91.6 | 100.0 | 100.0 | 100.0 | **5.6[4]** | 37.9[4] | 13.9[4] | 8.7[4] | 6.7[4] |
| Wood and Lumber | **68.3[4]** | 1.0[4] | 22.4[4] | 14.8[4] | 68.8[4] | **21.9[4]** | 17.8[4] | 6.7[4] | 4.5[4] | 7.3[4] |

[1] Rate of foreign dependency is calculated as follows:

$$\frac{\text{Import volume} - \text{Export volume}}{\text{Domestic production volume} + \text{Import volume} - \text{Export volume}} \times 100$$

However copper, lead, zinc, tin, aluminium and nickel are calculated as follows:

$$\left[1 - \frac{\text{Domestic mineral output}}{\text{Consumption of metal}}\right] \times 100$$

[2] In oil equivalent terms for coal, coke, oil, natural gas, hydro and nuclear generated electricity.

[3] FY 1981, [4] 1980.

[5] For copper, zinc and aluminium, the share of ores, ingots and alloys (unprocessed); *for lead, tin and nickel, the share of ingots and* alloys (unprocessed). For iron ore, lead, zinc, tin, aluminium and nickel figures used were in value terms, *data for other natural resources* were in physical terms.

Source: MITI, *White Paper on International Trade*, 1982, 1983.

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# ON THE UNDERSTANDING OF MEANINGS OF SUBJECTIVITY IN SOCIAL SCIENCES

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## I. Introduction

### *Science and Technology vs. Holistic Wisdom*

There have been attempts to get rid of monism in the outlook on the world (die Weltanschauung) which includes human wisdom, in concert with decentralization and diversification in the power structure of politics and economy. One instance is an argument made from a standpoint of bio-ethics. It is certain that at least people in Western civilized nations have been enjoying a material life richer than before, thanks to the wisdom of "Cartesianism" and the subsequent experimental knowledge and technology. However, in the midst of a deadly impasse which is accompanied by the fear of nuclear warfare, environmental disruption, increase in entropy, racial prejudices, increasing disparity in wealth, alienation of human beings and so on, the Utopian idea that "technological innovations equal the progress of mankind" must now be thoroughly criticized. Science which forms the very basis of technology is knowledge, not wisdom. So it is of vital importance to review such an idea thoroughly in the light of "holistic wisdom", bearing in mind this aspect of modern civilization which was built on the basis of science and technology as tools. What is the most important with a tool is how to use it. The value of a tool is determined by how a man with established identity will use it.

How influential a tool is varies from time to time and place to place. Particularly it is determined by the degree of human identity. Insofar as it is closely related to human organizations, human identity has social nature which derives from human organizations including modern states. Accordingly, human values which are realized through subjective development of human identity should have objectivity and social nature which are restricted by time and place, as well as subjectivity. This means that the logic of human identity must at the same time hold good as the logic of objectivity restricted by time and place.

### *Necessary Reconstruction Work and Drastic Change in Values*

Then why is it that the above-mentioned holistic wisdom, cultural forces and human values are emphasized philosophically? Since monistic ideologies which build on the protection of vested interests are allowed to pass—There are "so many who are versed only in the principles of domi-

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nating." Contention for supremacy is certainly an aspect of ingrained human nature. But such people are led by old fixed ideas—it is necessary to review thoroughly such ideas in the light of the above-mentioned holistic superstructure. In other words, we cannot but rely on the potential of a bottom-up effort which is led by daily life wisdom protecting the daily lives of the masses, although it might be necessary to issue garrulous warnings severely criticizing frivolous ideas of "economic superpower" and "paradise of the masses"—in fact, there are criticisms of "the vulgar crowd" and "skepticism about the masses" is voiced. In short, it is essential to carry through an effort to reconstruct an economic, social and cultural base which goes beyond the existing industrialism and commercialism, under the leadership of the life-innovators who have stood up and taken action to defend their daily lives.

But, as a matter of course, a question will arise: "Will such reconstruction work really bring about a drastic change in values? Isn't force of habit far greater?" But "awareness of legitimacy" is so inconstant. It may collapse so easily. K. E. Boulding says, "The lower part of an iceberg may be melted by warm water. An unexpected catastrophic downfall may occur overnight. It is an iceberg effect." I suspect that such warm water has already appeared as a "burgeoning current".

## II. Characteristics of Economics as an Exact Science and a Reconsideration of "Controversy of Value Judgment"

### *Hypothesis on Profit vs. Need to have a Multangular Insight*

Up until the "Keynesian Revolution" the Ricardian theory had been the mainstream of the world's economics. Ricardo, a stockbroker-turned-economist of broad outlook, had anticipated, as early as the early 19th century, the coming of an international gold standard. "The premise of his theory was implicitly that an economist need not pay much attention to man's motivation for action other than the pursuit of wealth."[1] But Mill, a leading figure in the economics of the next generation, "did not strictly distinguish between reasoning on the assumption that man's only motivation is the pursuit of wealth and one which is not based on such a premise".[2] He also says, "But the trouble does not lie in man's fundamental mental structure. The reason why people at large are so poorly motivated for the public interest is not that man is essentially motivated in such a manner but that man is not accustomed to thinking of the public interest so eagerly as he does, from morning till night, of things which promote his own interests. If they are awakened to the importance of the public interest to the extent that they are now only to the importance of self-interest and at the same time have a dread of their desire to be conspicuous and a sense of shame, it could generate an extremely painstaking effort and an extremely heroic spirit of self-sacrifice among them."[3] Mill wrote "Autobiography" which contains his famous remarks, "I am a democrat, but have never been a socialist." He had an outstanding multangular way of thinking which is evidenced by his works. This means that the capitalistic economy in the latter half of the 19th century had gradually matured.

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[1] Alfred Marshall, *Principles of Economics*, 9th ed., 1961, p. 766.
[2] Alfred Marshall, *Ibid.*, p. 766.

Out of the comprehensive theoretical system of Adam Smith who wrote the great work on economics on the eve of the Industrial Revolution came liberalism as the logic of the strong and mammonism. And the "laissez-faire" economic policy brought about unprecedented economic prosperity and popularization of what had thus far been enjoyed only by the privileged few. These were extra benefits of market-oriented mass production and mass sales. It can be said that, in this way, both the capitalistic system as the stage and business enterprises as the performers succeeded as an "income and wealth centre".

### *Ideas and Interests*

In the 1870s the capitalistic economy gradually matured in keeping with penetration of the Industrial Revolution into Germany and the United States. Under this historical setting controversies on methodology developed after 1870. Most noteworthy of them are "controversy on value judgment" in the Social Policy Society in Vienna in 1909. Through a series of controversies the weak points of the methodology of "the historical school" which contained an interrelation between scholarship and politics were disclosed (although this school played the role of an influential critical force against the classical school). It is said that the end of the "historical school" meant "banishment of value judgment and freedom from values."

But it is quite natural that a clear line should be drawn between perception of "what exists" and advocacy for "what should exist". Weber contends that "one should distinguish between talking about perception and passing value judgment, that one should clarify one's own idea of values and that one should clearly distinguish between what one talks about perception and what one considers value judgment—will, desire or determination". This is "not because 'what should be' (Sollen) is underestimated but because, on the contrary, he is opposed to the rude intrusion by a technical entity called 'empirical science' into the most sacred ideal world or the world of Weltanschauung."

In Hisao Ohtsuka's interpretation of Weber's theory "the interrelation between ideas and interests in history" is underscored. He quotes a passage from Weber, "What directly govern man's behaviour are not ideas but interests. But the image of the world created by ideas often determines the direction of the track as the switchman does, and along the direction determined the dynamics of interests has pushed man's behaviour."[4] The "ideas" mean "ideas preached by prophets." There are a wide variety of ideas, but they can be divided broadly into selfish commercialism and social welfare-oriented public spirit. This paper is designed to stress the importance of multi-dimensional way of thinking vis-a-vis reality which, like a pendulum, swings between both extremes. (My description about the actual world of the commercial pursuit of profits is contained in my paper on the underground economy.)

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[3] John Stuart Mill, *Autobiography*, new edition 1908, pp. 133–134.

### *Characteristics of Social Sciences: To Understand the Meanings of the Subjectivity*

In the light of the purport of this paper, the latter meaning of ideas can be better explained by the words "holistic wisdom". In a science rational judgment based on reasoning comes to the fore, but it should be clearly distinguished from "holistic wisdom" which is its superstructure. But the problem is that the subject and object of this rational judgment in the case of social sciences are men who are possessed of knowledge, emotion and will. Why is it possible, then, to observe and pass judgment on the meanings of the subjectivity of human behaviours and relationships? In other words, why is it possible to understand, rather than observe, the meanings of the subjectivity?

The working of this understanding was explained in Sombart's economic theory ("Three Types of Economics", 1930). But here I will present my own interpretation of the working. In my opinion, it is possible to do so because it is man possessed of knowledge, emotion and will that understands and pass rational judgment on the meanings of the subjectivity. A natural scientist who makes purely scientific observations will never understand it. In that type of materialism which takes physics as a model and monism like "modern economics" or hypothesis on profit, the meanings of the subjectivity which form an important moment in cultural science are very likely to be ignored. (In this context, "socialistic management" becomes nonsensical).

And here one finds the defects or limits of optimistic materialism which is supported by relatively simplistic faith in systems—the capital-centred free system or the labour-centred restriction system. The typical corporate philosophy or management objective of modern business enterprises has long been "pursuit of profits". And the antithesis of this sectionalistic logic of capital has been realization of equality throgh class struggle. To date, both have proved fairly successful. As a result of the establishment of the right to work as an antagonistic force against the liberalistic worship of the almighty capital, equal opportunity and outcome have been realized to some extent in advanced nations. But isn't this a relatively simplistic schema of "capital-centered system" vs. "labour-centred system", a product of the relatively optimistic way of thinking in the growth period of the capitalistic system? In this period of maturity of the capitalistic system the capital-centred way of thinking has generated many harmful effects and "socialism" has brought about the alienation of man as a result of mis-applied equality and suppression of freedom. Why is it that developing nations often advocate "socialism"? It is because "socialism" as the anti-thesis of capitalism becomes a most suitable weapon with which to undermine the predominance and vested rights of advanced nations' capitalism.

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[4] Hisao Ohtsuka, *The Methods of Social Sciences*, 1966, p. 3.

### *Fatal Wound as a Result of Emulating Physics*

In my opinion, the tendency to model after natural sciences, particularly physics, in Marxian economics or socialistic theories—economists of the school of Popper, Samuelson and so on often say, "physics sets a good model to theoretical economics"; they even identify the methodology of social sciences with that of natural sciences.—means a fatal defect of their theories as social science, particularly as cultural science.

Some Marxists have attempted to have "Das Kapital" and Marx's early humanitarian works complement each other. But the fundamental monistic nature (refer to, for example, the "Methodological Argument" in Introduction) of "Das Kapital" (only Vol. 1 published in 1867 was the work of Marx's own writing) is self-evident. Also refer to Sartre's "Criticism of 'Das Kapital' ". The book lacks theoretical explanation about "how the abstract idea of nature and history will shift to the specific details of individuals' daily lives and the special characteristics of individual things. The question is the basic theme of Existentialism. Moreover, Marxism went bankrupt because it subjected individuals to the predetermined theoretical system", says Sartre.[5] One can find the second limits of Marxism in its dialectical Materialism. While it bases the historical process on nature, for Sartre, an existentialistic standpoint means a dialectical movement toward human freedom.

Sartre writes, "The influential status Marxism attained is never an outcome nor evidence of its scientific nature. It is almost completely attributable to its prophetic, fanciful and irrational elements . . . . Its conviction is not based on an empirical premise or a presumed "law of history". It is simply based on man's psychological desire for certainty. In this sense, Marxism plays the role of a religion. Therefore, its effects are of religious nature."[6]

[5] Daniel Bell, *The Social Sciences Since the Second World War*, 1982, p. 90.
[6] Daniel Bell, *Ibid.*, pp. 93–94.

### *A Branch of Biology in a Broad Sense*

A. Marshall who made a comprehensive survey of past studies on modern economics (his most important work "Principles of Economics", 1890) wrote in "Supplement: Development of Economics" of the book, "It was socialists that were deeply aware of the behavioural motivation latent in man's psyche and recognized its significance to some extent. Latent in their unrefined rhapsodies were intelligent observations and highly suggestive propositions from which philosophers and economists as well could have learned much."[7]

He says, "It was under the influence of some biological studies that economists gradually tended toward consideration of the variability of human nature." And he goes so far as to say, "Economics has no close analogy with physical science. Economics is a branch of biology in a broad sense."[8] But it is lately said that "Human behaviour is more complex than sociobiology and bioeconomics consider it to be."

## III. Unscientific Theory of Economics Proposed

### *Limits of Science*

What we should ponder here is the relationship between Weber's "ideas preached by prophets", Bell's "prophetic, fanciful and irrational elements of Marxism" and the rational judgment based on reasoning. It is easy to, after the manner of Weber, exclude "prophecy" as part of the "idea" out of "rational judgement". And this is indeed a commonly accepted way of thinking among many economists. In the case of Marxism, however, both are tightly intermingled with each other. Thus Marxism can be neither a natural science nor a social science. It seems that Marxism as such points to the very limits of science which builds solely on reasoning. Plainly speaking, Marxism is a religious ideology which sets fire to and fuels man's desire to dominate. It is a model of unscientific theory of economics. But it appears that, for many people who are not scientists, an unscientific theory like Marx's which appeals to "holistic wisdom" encompassing knowledge, emotion and will is far more attractive and convincing.

Also it appears that, in this turbulent era of secular stagflation and uncertainties as aspects of the last stage of capitalism, an unscientific theory which may be illegitimate as a science but clearly predicts the coming of a new age based on a multangular insight is more welcome. The insight should be an objective one which will make the next move in anticipation of what will be burgeoning. But the probability of such an insight hitting the mark will be more than 60%. It contains a sort of gamble. Thus it cannot be free from the importance of timing, the ability to make decision and the will to run a risk. While Weber's "prophecy" is interpreted as part of the "idea", however, this insight is not a mere "Sollen". It is a foresight of the unknowns which are caught in advance.

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[7] Alfred Marshall, *op. cit.*, pp. 763–764.
[8] Alfred Marshall, *op. cit.*, pp. 763–772.

The most important role of economics is to foresee the future. It must be able to foresee in what is burgeoning the big current of the future. And such foresight can never be achieved only by inborn intelligence. I think it must be a product of hard work. But it does not necessarily prove successful since it may result in wrong forecast due to self-righteousness and also timing is a very important related factor. Is the fact that nonetheless many people try to use their insight to foresee the future attributable to their youthful ardour or their karma as founders? It is not rare in the actual business world that enterprising businessmen strike out a new direction based on their own insight. It may be safe to withdraw in one's own rationality, but in a turbulent era like this world it is safer to "run a risk in search of dreams". To prevent decline, one has no alternative other than to sow the seeds of "new business" by entering into new fields while one's business is at its growth stage.

Then the next problem will relate to scientists' awareness of their mission. But in my opinion the establishment of a new paradigm will require those who will interpret and comment on it within its framework inheriting the spirit of its originator.

Next, what are the specific characteristics of managerial science? They are to understand the true meanings of the behaviours of corporate executives and their employees through which they try to establish their identity using the insight or self-righteousness peculiar to "those who are versed in the principles of economy" in the actual business world, and to establish generally a systematic theory.

## *The Meanings of the Life-Innovator*

If one is to run the risk of adopting an unscientific theory of economics, setting insight aside, one must at least go beyond being based on materialism or the theory of value of labour. It is imperative to be based on broader theories of human values and human capital, as well as on a more comprehensive dialectical approach. And the central concept in such a broader approach should be the "life-innovator" who innovates upon himself based on his own understanding of life in this world. In other words, such an approach must be made by the life-innovator as a human being with established identity (its independence or originality is in great measure backed up by its morality). The success of such an approach is greatly dependent on the life-innovator's conscious effort to realize himself, for the very idea of life innovation forms the basis of all creative efforts to embark on new business—in other words, whether one can get a certain thing started or not is dependent on his ability to review his past activities and innovate upon himself in his daily life. One should start with self-management.

It was about 20 years ago that I used the concept of the life-innovator for the first time. At that time I was obliged to argue with the late Dr. Nobuyuki Ohkuma about this concept. It was my book, "The Life-Innovator" (Orion Publishing Co., 1970) that triggered the dispute. In recent years, the word "life-innovator" has been used frequently by many people. They seem to be using the word to mean "consumer in a broader sense". But the true meaning of the word involves those who endeavour autonomously to innovate upon themselves in their efforts to manage the entire nation, municipalities and business enterprises, as well as citizens endeavouring to defend their daily lives. They are all engaged in their respective sincere efforts on the basis of Self-Innovation to cross the woof comprising workplaces, families and communities by the warp comprising the direction of the entire nation and the trends of social strata. Each of them is an independent, historical and therefore policy-making existence. It is important to understand the contemporary significance of the life-innovator rather than merely stressing the non-historical and non-valuable aspects of this concept.

Thus the concept of the life-innovator, which focuses on the methodological totality (holonics, for example), the historicalness and policy-making function of the life-innovator, must go beyond the conventional theories of management. At the same time it must not be a "dead estheticism" which builds on optimistic assumptions (for example, hypothesis on "sovereignty of the consumer" in modern economics). For this purpose, it is important to minimize the number of assumptions involved and be a good judge of them. This relates to the above-mentioned insight peculiar to "those who are versed in the principles of economy".

If this concept meets these requirements, it can be operable even though it may be unscientific, and will serve at least as a viable strategy.

## IV. Reconsideration on "Large is Better" Faith which is based on Optimism

### *Five Optimistic Credos*

This optimistic concept is dependent on the following five credos which preach, "Big is Better!"The first one advocates the concept that the larger the satisfaction with material desire, the happier one becomes. This is a credo in satisfied material life. The second one stresses the merit of bigness—"Large is Better!" and "The bigger, the better". The third one represents a credo that scientific and technological innovations promise infinite use of infinite resources and environment. In this credo technology has infinite possibilities.

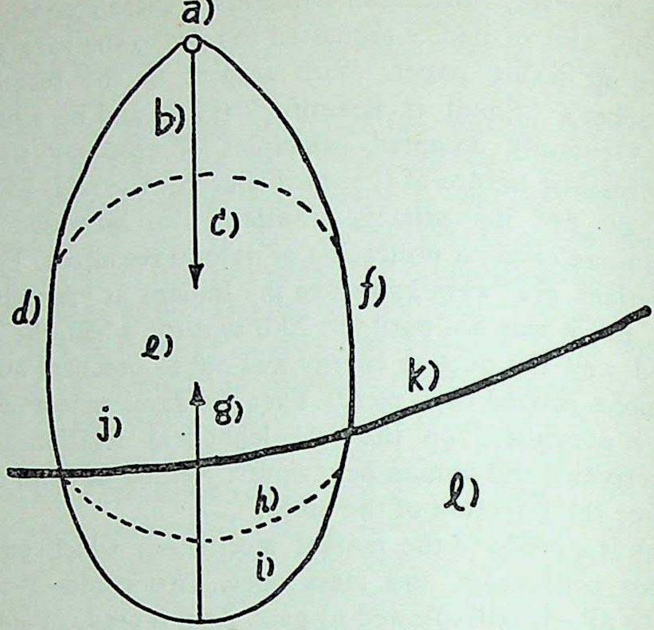
There are, however, substantial criticisms of these credos. As regards the first credo, the reader is requested to refer to the various economic theories taken up in this paper. With respect to the second concept, E. F. Schumacher's "Small is Beautiful" (1973) and his works are very informative. Generally accepted principles of economy will suffice to reveal the unrealistic nature of the third concept. I would add that new technologies do not immediately translate into increased production capacity and more efficient utilization of natural resources. For example, oil and uranium ore were known to the Indians as "flammable water" and the like. But it was not until the 20th century when the automobile was invented and the nuclear energy was put to practical use that these natural resources proved their merits. Even the development of production technologies is dependent on the interdependent relationship between production activities and human behaviours. Neither of them can unilaterally determine the direction of the other.

The fourth is a credo of the market mechanism which embodies the credo in mass production and mass sales. This credo—the "invisible hand" benefits all—is still allowed to pass. As this credo is advanced by liberalism which is the logic of the strong, its flaws will be aggravated in this area of stagnant economies. The fifth is a credo to the power of the state. There is a tacit credo of the modern state's ability to act as a "guardian deity" when the private sector gets stalemated. In a serious crisis, this credo changes into support of liberalistic state controls on the economy as exemplified by the conglutination of relationships between politics and business in Japan, or Japan Inc.

But today these credos are collapsing although partially. For example, Japan's favourite aggressive sales techniques which take advantage of its mass production systems are now being undermined by the growing tendency toward limited production of a wide variety of products.

## *The Awakened Consumer*

At a time when consumption is being stratified as well as being popularized and diversified to polarity, the consumption pattern by both quality goods purchasers and life-innovators will become more and more individualistic. Thus the fact that the consumer who used to be a "puppet" has come to be aware of the individualistic needs to innovate upon his daily life is exerting a great influence on marketers. If the consumer indicates an artisitic purchasing pattern (though it may be extreme case) or seeks after an individualistic way of life—doing only what is really worth doing—his or her needs and wishes directly affect manufacturers. Business enterprises are thus forced to adopt new technologies or production methods that fit in with the consumer's personal and intimate needs. Also they are forced to plan and implement a lineup of human resources that meets the consumer's diversified and elastic



(a) Ultimate & nominal status
(b) Predominance need of power elites
(c) Competition in climbing the corporate ladder
(d) Industriousness and intuition (education)
(e) Upward-looking symbol-oriented middle position men
(f) Diverse objectives
(g) Identity-oriented
(h) Individuality-oriented
(i) Skill
(j) Priority to famliy, hobby, etc.
(k) Company employees with a side job, trend-consciousness, volunteerism, multiple abilities, diversification and solidarity
(l) Dropout

Fig. 1. From a "Personal Connections-Oriented Society" to a "Human Capital-Oriented Society"

*Supplementary Note*

The human resources composition in the business enterprise can be broken down into the power elites (20%), the outsiders who spin out, rise in revolt or drop out (20%) and the middle position people who are opportunistic, upward-looking symbol-oriented and family & hobby-minded (60%). The middle position people are those company people who are "neither good nor bad."

Man is essentially a mixture of divinity and devilism. But as man has begun to lose his own identity gradually, the degree of man's devilism has become more and more prevalent. In the days of Katsu Kaishu (a great in the last days of the Tokugawa shogunate) the ratio between man's divinity and man's devilism was 4 to 6. In recent years, it has worsened to 20% to 80%. In the classification of man's personality and capability, those who are capable enough to make social contributions account for only 20% of the total population. It seems that the remainder are mostly those who are capable, but are materialistic and mean, or those who are incapable and mean, but pretend to be otherwise.

But this may be, as J. S. Mill says, attributable in large part to the prevalent materialistic value system.

needs. In fact, some business enterprises have already started to develop such a lineup in anticipation of such softneeds of the consumer.

The more soft and service-oriented the economy becomes, the more human resources-oriented the conventional capital- or finance-oriented capitalism will have to become. And the human capital is never a mere money-making machine. The middle position people who form the majority of company people place equal emphasis on their own jobs and the well-being of their families. Moreover, most of them are hobby oriented. And many of them sometimes think of changing their jobs in an attempt to find out a way to live a more worth-while life. Business enterprises are gradually changing from places for people with high corporate loyalty to places for people with diverse personal tastes who give utmost priority to their own individuality and the well-being of their families.

### *Small Groups and Venture*

This trend has spawned many small venture businesses which operate within parent companies. These small businesses are run by company employees who actively respond to the new challenges their companies offer. These company employees have broad authority to manage their own business. In the United States, too, there is a tendency more and more toward small scale of family finances, and factories as well. This can be said to be an era of small groups.

It seems that the conventional hierarchical organization which is being gradually decentralized will eventually change into an amoebic meshwork. And such meshworks may become intermingled with each other in strata to form a new industrial organization, for such an organization is more suited for realizing each person's human values and the softer is the management organization, the higher is the management efficiency. For example, if working at home becomes generally accepted, the intelligent productivity will increase, because more weight is given to creative work rather than to simple wagework.

### *Coexistence of Family, Business and Local Community*

Thus far the community which is centred on the family has been subjected to the "corporate lord". But the true significance of the communities is now being recognized and the weight of the profit earning community which has so far been excessively emphasized will be reduced. As a result, the relation between the three will be normalized.

The importance of the profit earning community positioned as part of the entire community will be recognized because of the abundance and excellence of the human resource it has. And so long as Japanese people continue to attach importance to hard work, thrift and saving, and if such structural defects as factional discrimination in Japan is corrected and the human wisdom and intelligence—human capabilities—which filter unsorted information disseminated in this global information age prove their merits, we have a bright future. In other words, our future rests on the correlationship between the human capital equipped with the wisdom and intelligence to use valuable know-how and senses efficiently and the life-innovator who enjoys the results of such wisdom and intelligence, more exactly on how wisely the holistic wisdom of the life-innovator will direct the existing conflicts of interests vs. ideas.

To sum up, it is transformation of "ideas". And the transformation, although partially, is already contributing to the adjustment of conflicts of interests.

## V. The Prevalent Optimistic Materialism Criticized

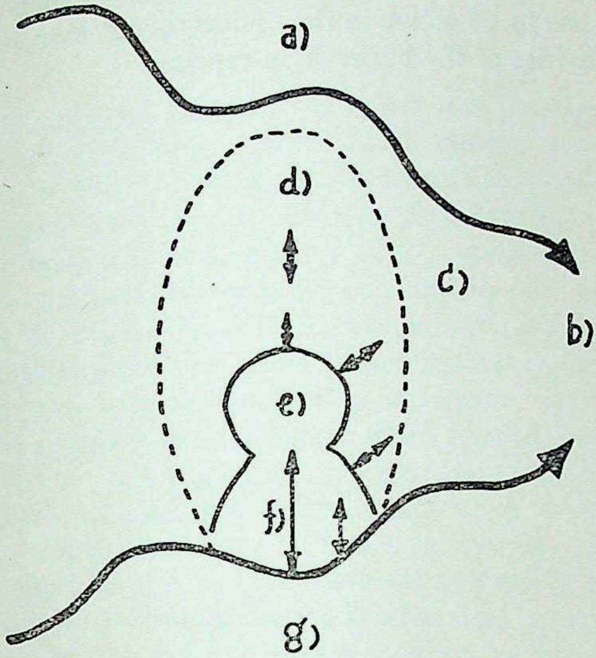
In actuality, we are confronted with a big wall of powerful old ideas, conflicts of interests and vested interests. And the current objective sciences are accelerating the social malady and the devastation of the public mind because of their legitimacy and their keen interest in man's material desire, ambition and anxiety. If Keynes was right when he said, "Conscious or unconscious, man is controlled by a certain fixed idea", the traditional way of thinking and looking at things in economics and managerial science is partially responsible for the current global chaotic situation and dirty tendency.

If the major assumption in economics "the infinite pursuit of desire and profits" is modified to some extent and such elements as thrift, worthwhile daily life and "awareness of the earth as one family" are introduced, the substance of economics and managerial science will change considerably. So it is imperative to drastically change scientists' "awareness of legitimacy" as their academic credo by transcending the traditional scientific theories which are based on the assumption of atomistic infinite fulfillment of desire and materialistic egoism.

It is true that Keynesianism played a very important role in drastically changing the academic credo. Recognizing the downward rigidity (the ratchet effect) of wages and so on, it succeeded in making a new phase in the effective demand and thus opening up a new sphere in the demand side. But it was overly dependent on the power of the modern state, failed to make a searching inquiry into its arbitrariness and inefficiency, and therefore hit on the stumbling block of evil effects of big governments. In actuality we now have parliamentary democracies which are quite different from what he termed as "the rule by the sage" and are very vulnerable to political pressures from sponsor's group. They are expensive and mobocratic, but in the long run will be reliant on a holistic wisdom of the life-innovator.

Therefore, it is not necessary to go back to the pre-Keynesian "logic of productive force". Rather it is imperative to reflect on how the human life which supports both the productive force and the effective demand should be and on the reality of the entire ecosystem.

Without extrapolating this far, it is possible to illustrate the backbone of the reality discerning pattern in the Nato (my) theory as follows.



(a) Secular stagflation ⟨ Depression / Abatement of frictions through inflation
(b) To end of 20th century
(c) International cooperation
(d) Swelled, heavy taxation
(e) Business enterprise
(f) Worker-consumer
(g) Underground economy (real intention economy) on the rise

Fig. 2 Background of the Nato's Theory

The trend of secular stagflation is confirmed by the real GNP ratio which has been on the decrease since around 1968 when it reached a peak. To stem this trend, strenuous efforts are being made to enlarge the swelled government finance, increase the heavy taxes and relax government controls on financing business. Also international cooperation is promoted more positively than ever. On the other hand, the real-intention underground economy is on the rise. It is only natural that when the world of professed intentions becomes uncomfortable to live in, one wants to be active in the world of real intentions, which consequently prospers.

Under these severe circumstances, the business enterprise is endeavouring to find a way of the survivor through strategies and tactics to innovate and internationalize its operations. While submitting tamely to the swelled government and heavy taxes, it is making inroads into overseas markets to evade further burdens. And the worker-consumer is placed in a situation where he has to endeavour to defend his life and at the same time has to be active in the underground economy, while supporting the activities of the business enterprise.

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# FISCAL POLICY AND INCOME REDISTRIBUTION

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The main objective of this paper is to put into perspective the possibilities for poor countries to use their fiscal systems for redistributive purposes. Most of the discussion will be centred on the taxation side of the fiscal equation. The conclusions emerging from it will probably be disheartening to those who believe that a major assault on the problem of inequality can be effectuated by fiscal means. But this does not mean that tax policy can be of no help at all in promoting greater equity. Indeed, though its limitations are severe when judged against the goal of a major improvement in the overall distribution of income, the possibilities for significant achievements look far brighter when viewed in terms of the more limited objective of bringing about a more equitable distribution of the fiscal burden itself. In fact, if there is any single message to emerge from this paper, it is that when we look at a tax system with the distribution issue in mind, we are far better advised to think in terms of bringing about a fairer distribution of the tax burden than in terms of having a major impact on the overall distribution of income in the society in question.

## I. The Main Constraints on Tax Policy

Frequently, when the income distribution problem in LDC's is discussed, statements like the following emerge: "The top quintile of the income distribution now gets half of the existing total after-tax income, while the bottom quintile gets only 5 per cent. Thus if only additional tenth of the top group's share were taken away and given to the bottom group, the latter's share could be doubled." This kind of arithmetic makes good fodder for seminars, but does not do much for policy, as it papers over all of the problems involved in effectuating the sort of change it contemplates. Basically, these problems fall into five classes:

(a) The affected factors of production may leave the country.

(b) The affected factors of production may shift to other activities (in which lower taxes are paid) within the country.

(c) The taxes in question may be evaded.

(d) The taxes in question may not be levied in the first place.

(e) The taxes may be levied but not have the desired effect.

There follow some brief comments on each of these items.

(a) *On factors of production leaving the country*—This may at first glance appear to be a point of little practical importance given the constraints that exist in today's world with respect to international migra-

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tion. Nonetheless, I think such a judgment is unwarranted, especially in the context of redistributive fiscal policy measures. The facts, I believe, are that the strongest barriers to international migration bear against the poorest strata of the income distribution in LDC's, while the possibilities for migration by the upper strata are quite real (viz. the large fractions of the output of doctors by Filipino and Colombian medical school that have ended up practicing in the U.S., and the large numbers of Indian social scientists teaching in U.S., Canadian, and U.K. universities.)

Much more important than labour migration, however, is that of capital. There can be little doubt that most wealthy people, in any less-developed country in the world, can and do find ways of having bank accounts and securities portfolios abroad. In many cases, the capital-market movements involved are perfectly legal; in others the black market is used as a vehicle for transferring funds. But in any event, the funds do get abroad, where they earn incomes which rarely pay any tax to the treasury of the country of origin. I believe that we can and should take as a datum that wealthy people in most LDC's earn yields on their foreign holdings equal to the nominal yields on those investment minus whatever taxes may be withheld at the source by the host country. These are the yields which they compare with what they can earn at home.[1] If the economic return to capital becomes more unfavourable for home-country investment, this will carry as a consequence a greater flow of funds overseas, where it will be beyond the effective reach of the LDC tax net. Any discussion of redistribution by fiscal means which does not recognize the existence and importance of this avenue escape from local taxation must be characterized as hopelessly unrealistic.

(b) *Tax "Shelters" within the Country*—Realism also dictates that one recognize the existence (and probable inevitability) of areas within most LDC economies where factor incomes are taxed at effectively lower rates than in other areas. As far as capital is concerned, there is usually a relatively high rate of taxation of corporate profits, a lower rate of tax applying to many non-corporate activities (e.g. farming, retailing), and probably no tax at all on the imputed income from owner-occupied housing. In addition there are often special tax incentive schemes aimed at attracting funds to backward regions (e.g. Northeast Brazil) or to specified activities (e.g. low-income rental housing).

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[1] It should be noted that the use of the black market as a vehicle for the transfer of funds does not in itself lower the yield perceived by the LDC investor. If the official exchange rate is Rs. 7.5 to the dollar, and the black market rate Rs. 11.25, it is true that it takes 50 per cent more rupees to buy a black market dollar than an official one, but if the black market dollar is invested abroad at a yield of 8 per cent, and if the proceeds of the investment are then transferred back to the country of origin at the black market rate, the yield in rupees is also 8 per cent. Black market transactions run risks of detection (though in fact the likelihood is small) and of changes in the relevant exchange rate between the time of initial investment and the time that funds are repatriated, but the investment yield itself is unaffected by the use of the black market to transfer funds.

With respect to labour income, such special provisions are far less common, but substantial differences in the effective burden of taxation arise through differential evasion. Heavy taxation, at the source, of salary incomes thus gives rise to professional services being carried on under special contracts outside the formal salary structure of the firm. Similarly, heavy taxes on wage incomes lead to the subcontracting of simple manufacturing processes to small supplier firms which are in a better position than large companies to avoid or evade such taxes. Even where direct subcontracting is not undertaken, it appears that the relatively heavy taxation of wage and salary incomes in "organized" industry (e.g. modern textile firms, supermarkets, department stores, etc.) is a key factor in the survival of competitive activities (e.g. handicraft textiles, small retail shops) in the "unorganized" sector.

(c) *Tax evasion* clearly plays a role in the processes discussed under (a) and (b) above. It merits a separate heading mainly to underline its ubiquity and inevitability. This is not to say that efforts to attack tax evasion are in vain; quite to the contrary, such efforts are utterly essential for any reasonable degree of equity in taxation. But I do feel that a frank recognition of the phenomenon of evasion is required for the design of an equitable tax system. To pretend that farmers, shopkeepers, and independent professionals pay income taxes with anything like the same fidelity as wage and salary workers subject to withholding only leads to an exaggerated reliance being placed on personal income taxation as a revenue source, and to a consequently greater degree of horizontal inequity between those who cannot evade the legally applicable tax and the other groups with easier access to evasion routes. The course of wisdom for most LDC's is to combine a diversified tax portfolio (so that those groups which can evade a particular tax are at least picked up on other taxes in the package) with moderate rate structures (to limit the incentive to evade) and energetic enforcement (to limit the degree of response to whatever incentive exists). There can be no doubt, however, that this strategy has the effect of blunting the apparent possibilities for strongly redistributive taxation a conclusion which, in my view, should be taken as a fact of life.

(d) *Political constraints* is probably the best term under which to summarize the reasons why strongly redistributive taxes may not be levied in the first place. The U.S. is able to have marginal income tax rates of 50 per cent on personal incomes of, say, 8 times the per capita GNP. Such rates are evaded to some extent and by some groups, but they are paid in full by salaried workers subject to withholding and by others. But what can be taxed in the U.S. out of incomes of $ 50,000 per year and more, cannot be done in India on incomes of $ 800 per year and up, or in Central America on incomes in excess of $ 4,000 or $ 5,000.

Part of the reason why it cannot be done lies in real factors like those mentioned under (a) and (b) above. But a very important part lies directly in political factors. Put very simply, heavy taxation of incomes above the indicated figures would directly hit the very civil servants who design and administer the tax structure, and also the legislators who put it into law. In spite of the fact that their incomes put them in the top percentile or two of the income distribution, these groups, by and large, do not consider themselves as rich, but rather as part of a struggling middle class. Their tastes and consumption habits are not extravagant by international standards, or even in terms of the traditions of the elite in their own countries. The fact that these people are demonstrably a part of the very upper stratum of society in their own impoverished nations does not make them any more eager or willing to impose new, heavy, tax burdens on themselves. As long as this attitude prevails, and as long as the groups in question have the political clout to make it stick, even U. S.-style progressivity in income taxation will remain out of the range of possibility for the LDC's in question.

(e) *The incidence question* is in a sense simply the reflection of the forces referred to above. In very broad terms it can be summarized with the comment that tax structures are likely in fact to be a lot less progressive than they look. If, for example, the owners of capital in a LDC have access to outlets for their funds in the world capital market at yields of 8 per cent, efforts to tax the use of those funds at home will have the effect of a further capital outflow. In all likelihood, the final result will be that capital invested at home will still have an after-tax yield of 8 per cent (or whatever is judged by the investors to be reasonably comparable with the yields obtainable on the international market). If the taxation of income from capital at home is light, lots of funds will stay at home, and will produce a before-tax yield of, say, 10 per cent. If the relevant taxation is heavy, more capital will flow abroad, and that which stays at home may end up with a before-tax yield of, say, 16 per cent. In both of these cases the LDC owners of capital are really in the same income position—earning 8 per cent after taxes on their investments. But in the first case they appear to be bearing low taxes, and in the second to be bearing high taxes. In fact, as the example was framed, the burden of taxation on income from capital is in both cases passed on in the form of higher real product prices or lower real wages or both. Its ultimate incidence will depend on the distribution among income groups of the consumption of the affected products, and on the degree of substitutability of labour for capital in the affected activities. But reasonable values for the relevant parameters covering these aspects of incidence would surely lead to the tax being effectively more like a consumption tax and/or a general wage tax than a tax which truly reduces the real income of capital owners by the amounts collected.

The incidence effects of taxes work similarly when labour migration is involved. If some members of the affected group move out of the country as a consequence of the tax structure, the before-tax rewards of those who remain are increased, so that patients (for example) end up paying part of the tax burden nominally falling on doctors.

Where the reallocations induced by the tax system take place within the economy (i.e. by a reshuffling of factors from heavier- to lighter-taxed activities) rather than by a net out-migration of labour or capital, the situation is somewhat different. Here the most directly traceable effect of heavier taxation of a factor in some activities is to lower the real rewards earned by the same factor in lighter-taxed activities. Thus, for example, the heavier taxation of corporate earnings operates (in the absence of out-migration of capital from the country) to drive down the rewards earned by capital in non-corporate uses. Similarly, the heavier taxation of the earnings of salaried professionals works in the direction of lowering those of professionals in independent practice. Under certain circumstances (the so-called Cobb-Douglas case is the best example), this process simply works as a tax-spreading device—the tax on the income of corporate capital falls in the final analysis on the income of all (i.e. corporate plus non-corporate) capital, and the tax on the earnings of salaried accountants is spread ultimately among all (i.e. salaried plus self-employed) accountants.

This "tax-spreading" effect, which means that when a particular factor is subject to higher taxation in some activities than in others, the effect of this higher taxation is felt by similar factors in all activities (even those subject to little or no taxation) is the clearest implication of incidence theory when out-migration is not a significant element in the picture. But there may be other effects as well—causing impacts on consumer as a group or on the real earnings of other productive factors. I shall not go into those effects here, however, since one cannot generalize even about their direction without knowledge of the particulars of the case at hand.

## II. Some Redistributional Fiscal Policy Exercises

The discussion of the preceding section can best be viewed as a springboard for the analysis about to be presented. It is a springboard in the sense that, to pass from the previous section to the exercises we are about to engage in, a certain leap is involved—the exercises are not the logical consequence of what went before, but are, I hope, motivated and made plausible by it.

The particular meat that I would like to extract from the previous section for use in what is to follow is the judgment that there are strong grounds for caution and deliberation in the design of tax structures. In particular, crude arithmetical exercises purporting to show the redistributive potential of the tax system should be viewed with skepticism. I hope that enough skepticism has been implanted in the minds of my readers that they will be willing to accept the following self-imposed rules for judging what can plausibly be done by progressive taxation in a LDC context.

(A) We will consider progressive taxation to begin at a level equal to the average per-family (or per-earner) income of the country.

(B) We will consider applying only moderate rates of tax (say 10 to 25 per cent) to incomes immediately in excess of the average described in A. Thus, earnings in excess of the average, but less than $1\frac{1}{2}$ times it would be taxed at rates no greater than, say, 10 per cent; and earnings between $1\frac{1}{2}$ and $2\frac{1}{2}$ times the average would be taxed at rates no greater than, say, 20 per cent.

(C) For incomes substantially in excess of the average, higher rates can be applied, but they should only gradually approach a limit of, say 40 per cent, and this limit should come into play at incomes in excess of, say, five or six times the average as defined in A.

These rules are in fact quite "optimistic" ones, when it comes to assessing the redistributive potential of taxes in a LDC environment. Pechman and Okner, in a recent monograph have analysed the entire U.S. tax system (federal, state, and local) under eight different sets (variants) of incidence assumptions. Under none of these sets does the average rate of tax of the 95th percentile of the income distribution exceed 25 per cent, or that of the 99th percentile exceed 30 per cent, or that of the top percentile exceed 40 per cent.[2] Our "simulations" for LDC's, we shall see, come quite close to these figures, when combined with a "base" of proportional taxation (such as might be provided by sales or value-added taxation) striking all income groups at a rate of around 10 per cent.

We start with a hypothetical LDC income distribution which is, in relative terms, a bit more equal than that reported by Pechman and Okner (Table 4–2, p. 46) for the U.S. Columns (1) and (2) of Table Ia present this distribution. In Column (3) the average income of each fractile, relative to the overall national average, is calculated. Where this relation exceeds unity, the excess over one represents what rule A would permit to be tapped for progressive taxation. This excess is shown in Column (4). Column (5) gives the marginal tax rates which were applied to each group's income, in accordance with rules B and C.

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[2] See Joseph A. Pechman and Benjamin A. Okner *Who Bears The Tax Burden?* (Washington: The Brookings Institution, 1974), Table 4–4, p. 51. Some readers might wonder why this study of the U.S. tax system is introduced into a paper dealing with income redistribution in the LDC's. The answer is that the Pechman-Okner study is unique. It is the only study that so thoroughly covers the incidence of a *complete* tax system in such detail. It should also be noted that none of the conclusions of the present paper are derived from Pechman-Okner's results. I have really used their study only to convey an idea of how taxes affected income distribution in an important developed country with a good record of tax compliance and administration. My belief is that one cannot reasonably expect a much better "performance" than this in a less-developed country.

The derivation of the average tax per unit in the fractile group, presented in Column (6), was done as follows: for the fourth quintile, the rate of 10 per cent was applied to the tax base of 0.25 "average incomes", shown in Column (4). For the ninth decile, with a taxable income of 0.50 [from Column (4)], the first 0.25 was taken to be taxed at the rate of 10 per cent, and the second 0.25 was assumed to be taxed at a rate of 16 per cent, the total resulting tax being .065 [$=(.25)\times(.1) + (.25)\times(.16)$] "average incomes". The rest of Column (6) is built up in the same way. For the 91st–95th decile, "taxable income" is 1.00 "average incomes". The first 0.50 of this would carry a tax of .065 (as calculated above), to which would be added a tax of 20% on the second 0.50, yielding a total tax of .165 "average incomes".

In Column (7) the average tax rate for each group is found by dividing the calculated tax [Column (6)] by the average income of the group [Column (2)]. Finally, in Column (7), the total tax of each group is calculated, as a per cent of total income, by multiplying the average rates of tax from Column (6) by the percentage shares [from Column (2)] of each group in total income.

The global total of tax collections under the hypothetical setup depicted in Table Ia is 6.3 per cent of the total income of all groups taken together. This is a sizeable sum, viewed in fiscal policy terms. And it is to be emphasized that the tax system in question (viewed as the progressive component to be added to some proportional base) is significantly more progressive than the U.S. tax system under any of the incidence variants explored by Pechman and Okner. It is thus probably quite unrealistic to expect this strong: a tax performance from a typical LDC. But we shall explore its consequences nonetheless, with the aim of setting outside limits on what can reasonably be expected.

Needless to say, the tax side of the fiscal equation does not by itself effectuate a full redistribution. For this the expenditure side must also be taken into account. This is done in Table Ib, where the assumption is made that the benefits associated with the expenditure side are distributed among groups in proportion to their incomes. The net gains and losses accruing to the different income groups under these assumptions are shown in Column (5) of Table Ib. The most notable feature of this Table is the relatively small degree of benefit received by the lower income groups, in spite of the quite progressive tax structure.

This draws attention to the obvious point that the expenditure side has a very important influence on the ultimate redistributive properties of the fiscal system.

Unfortunately, our capacity for quantifying incidence by income group

## TABLE Ia

## HYPOTHETICAL PATTERN OF INCOME DISTRIBUTION WITH PROGRESSIVE TAXES (U.S.-Type Distribution)

| Fractile of Income Distribution | Percentage Share of Total Income Received | Average Income in Fractile, As % of National Average Income [=(2)÷(1)] | Excess of Fractile Average Income over National Average | Marginal Tax Rate Applied | Calculated Tax Per Unit in Fractile | Average Rate of Tax in Fractile [=(6)÷(3)] | Total Tax in Fractile, as % of Total Income [=(7)×(2)] |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Lowest quintile (20) | 5 | .25 | — | | | | |
| Second quintile (20) | 10 | .50 | — | | | | |
| Third quintile (20) | 15 | .75 | — | | | | |
| Fourth quintile (20) | 25 | 1.25 | 0.25 | .10 | .025 | .2 | .500 |
| Ninth decile (10) | 15 | 1.50 | 0.50 | .16 | .065 | .043 | .645 |
| 91st–95th percentile (5) | 10 | 2.00 | 1.00 | .20 | .165 | .083 | .830 |
| 96th–99th percentile (4) | 12 | 3.00 | 2.00 | .30 | .465 | .155 | 1.860 |
| Top percentile (1) | 8 | 8.00 | 7.00 | .40 | 2.465 | .308 | 2.465 |
| Total | 100 | | | | | | 6.300 |

TABLE Ib

GROUP GAINS AND COSTS OF PROGRESSIVE TAXES CUM PROPORTIONAL EXPENDITURES

| Fractile of Income Distribution | Percentage Share of Total Income Received | Costs of Progressive Taxes (From Table Ia, Col. 8) | Gains From Proportional Expenditures | Net Gains (+) or Costs (−) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| Lowest quintile (20) | 5 | — | + .315 | + .315 |
| Second quintile (20) | 10 | — | + .630 | + .630 |
| Third quintile (20) | 15 | — | + .945 | + .945 |
| Fourth quintile (20) | 25 | − .500 | +1.575 | +1.075 |
| Ninth decile (10) | 15 | − .645 | + .945 | + .300 |
| 91st–95th percentile (5) | 10 | − .830 | + .630 | − .200 |
| 96th–99th percentile (4) | 12 | −1.860 | + .759 | −1.101 |
| Top percentile (1) | 8 | −2.465 | + .501 | −1.964 |

is even more limited on the expenditure than on the tax side, so I shall only make a few general statements here. A great many government outlays go for general purposes (administration, police, the courts, national defence) whose assignment as benefits to particular income groups is necessarily quite arbitrary. The notion that these benefits are roughly proportional to income and/or wealth, however, seems at least to be a plausible approximation. Allocation in accordance with income also seems to be a sensible basis for government expenditures on such items as highways and other infrastructure investments, insofar as their costs are not covered by direct user charges (which for present purposes should not be counted as taxes). When one asks what are the expenditures that can reasonably be allocated on a per-capita or per-family-unit basis, they turn out to be relatively few: primary education, publicly dispensed medical services, and family allowances (in some countries) seem to be the best candidates here. (Actually, many family-allowance setups apply only to certain categories of workers, which exclude the very poor; and public secondary and higher education has benefits which at least in LDC's are concentrated disproportionately among the well-to-do.) Expenditures that are truly concentrated toward the bottom end of the income distribution are even harder to find. This category could include welfare payments in developed countries, but few LDC's have direct welfare programs. Within the LDC's only a few cases can be found (such as India's famine relief and rural works programs) in which the benefits of government outlays accrue predominantly to the poor.

Thus I believe that the type of redistribution implied by Table Ib can probably be taken as an optimistic assessment of what fiscal policy is likely to be able to do for income distribution in most LDC's. The effect is certainly small, if one starts with grandiose hopes of a major impact. The Gini coefficient for the distribution of income represented by Columns (1) and (2) of Table Ia is .402. That result when Column (2) is adjusted for the transfers shown in Column (5) of Table Ib is .372—only a modest change.

If the above gives a realistic picture of the possibilities of fiscal policy, based on the assumption that expenditure incidence is proportional, one may perhaps inquire as to what would happen if the moneys raised from taxation were spent much more equally. An attempt in this direction is reflected in Table Ic, where the assumption is made that the same amount of revenue as is involved in the tax explored in Table Ia is instead raised by proportional taxation but spent in such a way that each unit (individual or family, as the case may be) benefits equally. This last is an absurdly optimistic assumption, from the point of view of redistribution, but we explore its consequences nonetheless. Its implied effect on income distribution is given in Column (5) of Table Ic. Here it is seen, as should be expected, that the lowest income strata are more strongly benefited than is the case with the implicit transfer explored in Table Ib. But nonetheless the overall change in income distribution is again modest, with the Gini coefficient being reduced from .402 to .377.

TABLE Ic.

GROUP GAINS AND COSTS OF PROPORTIONAL TAXES CUM EQUAL EXPENDITURES PER UNIT

| Fractile of Income Distribution | Percentage Share of Total Income Received | Costs of Proportional Taxes | Gains from Equal Outlay Per unit | Net Gains (+) or Costs (–) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| Lowest quintile (20) | 5 | – .315 | +1.260 | +.945 |
| Second quintile (20) | 10 | – .630 | +1.260 | +.630 |
| Third quintile (20) | 15 | – .945 | +1.260 | +.315 |
| Fourth quintile (20) | 25 | –1.575 | +1.260 | –.315 |
| Ninth decile (10) | 15 | – .945 | + .630 | –.315 |
| 91st–95th percentile (5) | 10 | – .630 | + .315 | –.315 |
| 96th–99th percentile (4) | 12 | – .759 | + .263 | –.496 |
| Top percentile (1) | 8 | – .501 | + .052 | –.449 |

Tables IIa, IIb, and IIc are patterned after the corresponding Table I,

## TABLE IIa

## HYPOTHETICAL PATTERN OF INCOME DISTRIBUTION WITH PROGRESSIVE TAXES (LDC-TYPE DISTRIBUTION)

| Fractile of income distribution | Percentage share of total income received | Average income in fractile, as % of national average income [=(2)÷(1)] | Excess of fractile average income over national average | Marginal tax rate applied | Calculated tax per unit in fractile | Average rate of tax in fractile [=(6)÷(3)] | Total tax in fractile, as % of total income [=(7)×(2)] |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Lowest quintile (20) | 4 | .20 | — | | | | |
| Second quintile (20) | 8 | .40 | — | | | | |
| Third quintile (20) | 12 | .60 | — | | | | |
| Fourth quintile (20) | 20 | 1.00 | — | | | | |
| Ninth decile (10) | 16 | 1.60 | 0.60 | .10 | .06 | .038 | .608 |
| 91st–95th percentile (5) | 12.5 | 2.50 | 1.50 | .20 | .24 | .096 | 1.200 |
| 96th–99th percentile (4) | 16 | 4.00 | 3.00 | .33 | .74 | .185 | 2.960 |
| Top percentile (1) | 11.5 | 11.50 | 10.50 | .40 | 3.74 | .325 | 3.738 |
| Total | 100 | | | | | | 8.506 |

### TABLE IIb

### GROUP GAINS AND COSTS OF PROGRESSIVE TAXES CUM PROPORTIONAL EXPENDITURES (LDC-Type distribution)

| Fractile of income distribution | Percentage share of total income received | Costs of redistributive taxes | Gains from proportional expenditure | Net gains (+) or costs (–) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| Lowest quintile (20) | 4 | — | .340 | +.340 |
| Second quintile (20) | 8 | — | .680 | +.680 |
| Third quintile (20) | 12 | — | 1.021 | +1.021 |
| Fourth quintile (20) | 20 | — | 1.701 | +1.701 |
| Ninth decile (10) | 16 | –.608 | 1.361 | +.753 |
| 91st–95th percentile (5) | 12.5 | –1.200 | 1.063 | –.137 |
| 96th–99th percentile (4) | 16 | –2.960 | 1.361 | –1.599 |
| Top percentile (1) | 11.5 | –3.738 | .978 | –2.760 |
| | | | 8.505 | |

### TABLE IIc

### GROUP GAINS AND COSTS OF PROPORTIONAL TAXES CUM EQUAL EXPENDITURES PER UNIT (LDC-type distribution)

| Fractile of income distribution | Percentage share of total income received | Costs of proportional taxes | Gains from equal outlay per unit | Net gains (+) or costs (–) |
|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) |
| Lowest quintile (20) | 4 | –.340 | +1.701 | +1.361 |
| Second quintile (20) | 8 | –.680 | +1.701 | +1.021 |
| Third quintile (20) | 12 | –1.021 | +1.701 | +.680 |
| Fourth quintile (20) | 20 | –1.701 | +1.701 | — |
| Ninth decile (10) | 16 | –1.361 | +.851 | –.510 |
| 91th–95th percentile (5) | 12.5 | –1.063 | .426 | –.637 |
| 96th–99th percentile (4) | 16 | –1.361 | .340 | –1.021 |
| Top percentile (1) | 11.5 | –.978 | .085 | –.893 |

the only difference being that the assumed income distribution is more unequal, more closely approximating present-day reality in most LDC's. Together with the stretching of the upper tail of the income distribution, there is a corresponding stretching of the range over which the assumed tax rates apply, but the general pattern of rise of marginal rates from 10 per cent to 40 per cent is similar to that in Table Ia. The shift in assumptions between the Tables of set I and those of set II has very little effect on the overall conclusions to be drawn from the exercise. With the more unequal distribution of Tables II, a somewhat larger fraction (8.5 versus 6.3 per cent) of total income is raised by the assumed progressive tax pattern. The net redistribution revealed in Table IIb, where the progressive tax is joined to a proportional expenditure pattern, is also somewhat larger than that emerging from Table Ib, but the basic picture of a very modest impact on the lowest quintiles of the distribution remains. The Gini coefficient falls from .498 to .462 as the distribution of Column (2) of Table IIa is modified by the transfer shown in Column (5) of Table IIb.

The distributional shift entailed in shifting from outlays proportional to income to equal outlays per unit, is (as should be expected) more marked when the underlying distribution of income is more unequal. The transfers shown in Column (5) of Table IIc reveal this, but the Gini coefficient is still only reduced from .498 to .456. And the significance of even this modest fall must be tempered by the realization that the assumption of equal per-unit expenditure incidence (for a significant fraction of total outlays) is distinctly extreme.

When this paper was initially presented at a preliminary conference of authors and discussants, the principal suggestion made was that the analysis underlying Tables Ib, Ic, IIb, and IIc be extended to cover cases built on the assumption that moneys raised by progressive taxation would be spent in an egalitarian way (i.e., equal outlays per taxpaying unit). This is done in Tables Id and IId, and the effects of various combinations of policies on the Gini coefficient are summarized in Table III.

As shown in Table III, one gets almost identical Gini coefficients for the Progressive Tax, Proportional Expenditure Package as for the Proportional Tax, Egalitarian Expenditure Package—under either assumption concerning the basic distribution of income.

Not surprisingly, the combination of progressive taxes with egalitarian expenditure produces about twice the reduction in the Gini coefficient as either of the intermediate packages. However, I would like to emphaize the gross unrealism of this combination as a practical target for a major fiscal reform. It is certainly possible to find incremental expenditures which indeed are distributed in an egalitarian way, and to finance them by incremental taxes that are raised in a progressive fashion. But that is a far cry from reorganizing the whole of a country's governmental expenditures so that they are egalitarian in their incidence, and reordering its entire tax system so as to be as progressive as our numerical examples assume. Yet this type of major—indeed revolutionary—sort of change is what would be required to produce the Gini coefficicents of the last row of Table III. Hence my classification of them is unrealistic.

## TABLE Id

## GROUP GAINS AND COSTS OF PROGRESSIVE TAXES CUM EQUAL EXPENDITURES PER UNIT

| Fractile of income Distribution (1) | Percentage share of total income received (2) | Costs of progressive taxes (from Table Ia, col. 8) (3) | Gains from equal outlay per unit (4) | Net gain (+) or Costs (–) (5) |
|---|---|---|---|---|
| Lowest Quintile (20) | 5 | — | +1.260 | +1.260 |
| Second Quintile (20) | 10 | — | +1.260 | +1.260 |
| Third Quintile (20) | 15 | — | +1.260 | +1.260 |
| Fourth Quintile (20) | 25 | –.500 | +1.260 | +.760 |
| Ninth Decile (10) | 15 | –.645 | +.630 | –.015 |
| 91st–95th Percentile (5) | 10 | –.830 | +.315 | –.515 |
| 96th–99th Percentile (4) | 12 | –1.860 | +.263 | –1.597 |
| Top Percentile (1) | 8 | –2.465 | +.052 | –2.413 |

## TABLE IId

## GROUP GAINS AND COSTS OF PROGRESSIVE TAXES CUM EQUAL EXPENDITURES PER UNIT

| Fractile of income Distribution (1) | Percentage share of total income received (2) | Costs of progressive taxes (from Table IIa, col. 8) (3) | Gain from equal outlay per unit (4) | Net Gains (+) or Costs (–) (5) |
|---|---|---|---|---|
| Lowest Quintile (20) | 4 | — | +1.701 | +1.701 |
| Second Quintile (20) | 8 | — | +1.701 | +1.701 |
| Third Quintile (20) | 12 | — | +1.701 | +1.701 |
| Fourth Quintile (20) | 20 | — | +1.701 | +1.701 |
| Ninth Decile (10) | 16 | –.608 | +.851 | +.243 |
| 91st–95th Percentile (5) | 12.5 | –1.200 | +.426 | –.774 |
| 96th–99th Percentile (4) | 16 | –2.960 | +.340 | –2.620 |
| Top Percentile (1) | 11.5 | –3.738 | +.085 | –3.653 |

## TABLE III

## GINI COEFFICIENTS FOR ALTERNATIVE TAX-EXPENDITURE PACKAGES

| Policy Package | Basic distribution of income | |
|---|---|---|
| | US Type | LDC Type |
| None | .402 (Ia)[1] | .498 (IIa)[1] |
| Progressive Taxes, Proportional Exp. | .372 (Ib) | .462 (IIb) |
| Proportional Taxes, Egalitarian Exp. | .377 (Ic) | .456 (IIc) |
| Progressive Taxes, Egalitarian Exp. | .347 (Id) | .419 (IId) |

[1] Figures in parentheses give Table from which each Gini coefficient was derived. Gini coefficients calculated under the policy package labeled "None" are obtained from the unadjusted income distributions given in Column (2) of Tables Ia and Ib, respectively. Other Gini coefficients are based on these initial distributions, modified by the net gains and costs shown in the Tables indicated.

## III. Observations on the Struggle for Greater Equality

The main lesson emerging from the preceding sections is that those who are striving to improve the distribution of income in LDC's should be prepared for a long, arduous, demanding, and often frustrating struggle. The realities of unequal income distributions are stark, but the limitations and constraints that stand in the way of improvement are equally strong and real. There is no simple trick or touchstone, short of totally uprooting the existing economic, social, and political structure, that will with one or two or three strokes substantially alter the distributional picture that we now observe. The challenge is one of mustering the forces for an essentially permanent struggle, with many battles that are purely defensive, and others that gain ground bit by bit as a result of hard and continuous effort.

To give a sense of the directions that such a struggle might take, I present below an illustrative listing of some possible measures to improve the distribution picture:

(a) *Eliminate the income-tax exemption of imputed rent on owner-occupied dwellings*. There is probably no single fiscal area in which the cause of equality could be more directly and surely promoted than this one. Countries in which the very poor sleep in the streets are nonetheless implicitly subsidizing the housing of the wealthy to the tune of their marginal income-tax rates times the implicit rental in their dwellings (often two or three per family). This fact is clear, yet the political resistance to this particular reform is incredibly strong, and comes from homeowners of all income levels, and even from those who, though they do not now own houses, hope and plan some day to do so.

(b) *Shift part of the weight of progressive taxation from the income tax to a progressive consumption-expenditure* tax. This, to my knowledge, is the best way to induce the repatriation of capital held abroad by nationals of the country in question, to deter further capital outflows, and to capture within the local tax net the expenditures made by nationals traveling abroad (an important category of luxury spending in nearly all countries, but particularly so for the smaller ones).[3]

(c) *Improve assessment procedures for property tax purposes, preferably by shifting to a self-assessment scheme*. The property tax, as presently administered, is shot through with inequities. Assessed values differ from market values in grossly different degrees on different properties; inflation tends to be reflected in assessments only after incredibly long lags; and corruption is rife in the assessment process itself in many countries. A self-assessment scheme (particularly the market-enforced variety) would go far to rectify all these deficiencies.[4]

(d) *Categorically eliminate subsidized housing for those above the median income*. It is my general impression that most beneficiaries of public housing in LDC's are in fact in the upper half of the income distribution.

(e) *Institute electricity rate structures that reflect the true economic cost of power generation*. There can be little doubt that the cross-sectional demand for electric power is income elastic, yet this is one of the most ubiquitously subsidized public services.

(f) *Institute substantial tuition charges for public higher education, with special provision for the financing of the education of poorer students (preferably via loans)*. This is of particular importance in LDC's where free or nearly-free university education is given predominantly to the children of the rich.

(g) *Where unemployment and underemployment are serious problems, institute programs in which the government serves as an "employer of last resort"*. The government, in such cases, can perform a truly positive function by being a "bad" employer, i.e. by standing ready to employ those who would otherwise be destitute, on terms and conditions such that no serious competition with "regular" employments is involved. Such programs have great potential for ensuring some opportunity to the very worst-off segments of society

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[3] For elaboration on these points, see my "The Panamanian Income Tax System: A Heterodox View" (mimeo, June 1973).

[4] For more on self-assessment, see "Issues of Tax Reform for Latin America", in my *Taxation and Welfare* (Boston: Little, Brown and Co., 1974).

(at least those who are able-bodied), and they can also serve a useful informative function in giving direct information on the nature and extent of the poverty problem.

(h) *The government should avoid, in its own employment practices and in its legislation and regulations covering private-sector employment, the creation or perpetration of "labour elites".* Labour elites are generated when wages and conditions in certain protected segments of the labour market are very substantially superior to those in the market at large. The syndrome of the government as a "model employer", paying not only greater-than-market wages but also throwing in a variety of ample fringe benefits (free or grossly-subsidized housing, generous retirement pensions, special dependency allowances, etc.) should be shunted. The money spent in providing amenities to the labour elite is better spent on activities that truly help the really poor.

(i) *Tax incentives to industry should be viewed with great suspicion.* While no categorical case can be made against tax incentives which are properly designed to compensate for market imperfections or weaknesses, the fact remains that most tax incentive schemes actually adopted in LDC's have artificially encouraged the use of capital-intensive methods of production, and many have in addition resulted in the transfer of substantial sums from the public treasury into pure "producer surplus" in the hands of the owners of the affected enterprises.

The above listing could readily be extended, but I believe it is sufficient to support my main conclusions. They are:

(i) The attack on the income distribution problem should be multi-faceted, operating on a lot of different fronts at once.

(ii) There is no particularly close connection between the various facets of this attack. The battles can, by and large, be waged independently. All do not have to be fought or won simultaneously, and gains can be had by winning something along any given front.

(iii) Serious political resistance is to be expected along any relevant front. Almost by its nature, redistribution (unlike pure trade) is a game in which there must be losers as well as winners. And the losers, being those who already gain from the status quo, are likely to have substantial entrenched power in the existing setup.

(iv) Struggle is the key word where income redistribution is concerned. Mere lip-service to the cause will do no good.

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# DEVELOPING COUNTRIES: INTERNAL REGIONAL DISPROPORTIONS IN GROWING ECONOMIES

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## Introduction: The case for regional development

The preoccupation of many developing countries with industrial expansion from the 1950's onwards has led to reasonably impressive average results. An increase of their total GDP, in general, and of manufacturing output in particular, was among the tangible results of the recent development decade in developing countries.

Over the same period of time, disparities in income distribution between different social groups have widened; the problems of mass poverty and underemployment aggravated, growing urban concentrations failed to sustain the quality of life for urban poor, etc. However, very often matters relating to the above mentioned differences were left outside the sphere of highly aggregated economic models and global indicators used for assessment of the development process. In many cases this has resulted in creation of a misleading, distorted picture of the actual process.

Among other comparatively neglected areas of development policy and planning were regional development considerations, which sometimes were not even taken into account at all.* One reason for this neglect of the subject was and still is the weakness of regional growth theory. In fact, the theoretical foundation of recent regional development efforts can be identified as elements borrowed from traditional economic theory in general and aggregate growth theory in particular. Naturally, faced with imperfect concepts and theories and the reality of the problems at home, regional policy-making in developing countries has taken on an experimental and often confused character.

Another, perhaps more important reason resulted from the general, rather narrow approach to the development process with its over-emphasis on economic growth rates of production characteristic for past thinking in economics. The inevitable result of this lopsided approach was that with very rare exceptions, the view was maintained that regional development planning is a luxury which can be afforded only by the rich. The usual

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*The term region as used here refers to economic units smaller than but next in size to national units; they may or may not coincide with internal administrative subdivisions. For more details, see 'Main issues of regional development' below.

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outcome of the approach which basically centred around the idea of investment placement has been very often the establishment of typical industrial enclaves which, although helping to strengthen the national economy, had very slight, if any, impact on the surrounding territory. The lack of "change" in a horizontal direction manifested itself in disequilibrium between regions, urban centres and hinterland, big and small towns, etc., and had in many countries a tendency to threaten the national integrity posed by regional separatism and minority problems. All this led to the recognition of the necessity to lower the degree of polarization in development which was found neither economically efficient nor optimal in the social sense. For this purpose—to serve the goal of transforming a developing economy—regional development planning has been gradually introduced in many countries.

The role of regional development problems has also gained in importance in the light of recently revised "people-oriented" ordering of development priorities and greater importance assigned to the social aspects of development.

Against this general background, and taking into account the historical or traditional pattern of their development, the importance of regional development problems in developing countries might be summarized as follows:

1. Shape differentiation (contrasts) of the country's territory with respect to (a) exploitation of natural resources and (b) labour force potential and simultaneous existence of some modern and very backward sectors of the economy. Relations between regions conform to a common pattern of domination and dependence inherited from the time of colonial economy, a situation which is nowadays often described as "internal colonialism".

2. Most of the developing countries have not yet settled their major mis-locations of industries and infra-structure facilities and therefore have the possibility of avoiding the serious negative consequences of such mislocations.

3. A number of developing countries suffer from "gigantism" with regard to their principle cities which cannot accommodate and employ the migrants from the rest of the country. Experience shows that attempts at steering development away from over-urbanized regions cannot be separated from the policy of promoting development in backward regions. This can only be done within the framework of a regional development scheme. Therefore, urbanization and regional policy may converge and complement each other.

4. In newly developing countries, more so than in others, economic and social progress is concentrated in a few large urban centres and lacks transmission to the rest of the country. It is within the regional development scheme that a proper evaluation of a necessary "critical mass"

sufficient to start off self-sustaining growth of smaller towns can be done and hence create conditions for the spread of development over the rest of the country.

Two additional reasons why regional development issues are of particular importance in the 1970's derive from the basic objectives defined for the United Nations Second Development Decade. The two basic objectives for that period of time read as follows: (a) " . . . to accelerate markedly the growth of national gross product per head and (b) . . . to make the fruits of development available to the poverty-stricken masses of developing countries in a greater measure than before."*

The achievement of the first depends heavily on the mobilization of all available national resources and on their allocation in the most effective way and to a greater extent on the effectiveness of the regional development planning effort, or as the UN document puts it, "looking at the mobilization and allocation of resources from the regional point of view, the scope of their utilization may be substantially increased and the cost of achieving a greater national gross product markedly reduced."†

As far as the second objective of the Development Decade is concerned, the regional framework is also relevant for a comprehensive assessment of the income distribution. Very often viewing social problems at the national level does not reveal the real social situation.

## Some theoretical consideration

Our objective is to assess some of the most popular locational and regional growth theories selected on the basis of frequency of their use, particularly in developing countries.

From the viewpoint of national economic growth, the problem of regional development can be thought of as having two main components: (1) the location of individual industries (or projects) and (2) overall pattern of distribution of industrial activity. In practice these two elements are very closely interwoven: decisions on the location of industry are instrumental in determining the growth of a region; on the other hand, industrial growth being started in a region in one way or another forms a very serious element in further locational considerations. It follows that in practical work locational analysis must be supplemented by regional analysis and finding the latter should become the basis for programming further growth in the area.

However, in theory, the problem of regional development lies "between" micro and macro economic theories. Some parts of it have been generated within the classical locational analysis; others present the findings of the urban planners, but most of the ideas were originated within neoclassical theories of economic growth. It should be added that in regional economics, even more than in general economic theory, the attempt to reconcile micro and macro components of the theory is a very recent trend. It should also be mentioned that the bulk of thearetical and empirical work in regional development theory and locational analysis relates to the conditions prevailing in the developed countries. Therefore, the elements of those theories have very often a different relevance to the developing countries and in most cases need serious work on their adaptation.

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*"Towards Accelerated Development: Proposals for the Second United Nations Development Decade", UN publication, Sales No. E. 70. II. A. 2, New York, 1970, p. 6.

†"The United Nations Programme in Regional Development (An Introduction to Sub-National Planning)", New York, 1972, p. 3.

## Location of industry

Industrial location theory is the oldest and one of the more important elements of the major theoretical tools available for resolving regional growth problems. The main concern of much of the theoretical work in this area has been with the location criteria of the firm. Work of this nature thus assumed a given spatial pattern of economic activity and ignored both the factors which determine how economic activity comes to spread over space, as well as those which account for regional growth and decline over time. Although the theory has gone through major modifications and refinements since its first formulation by von Thunen and later by A. Weber and A. Lösch,[1] its main focus is still largely on micro-economic considerations. Von Thunen, for example, assumed the sites of towns as given, and postulated that the choice of agricultural activity would depend on the cost of transporting the product to market. This theory has been helpful in explaining the phenomenon of economic rent and, by the nature of its assumptions, it may also have applications in analyzing the effect of a new town on the surrounding agricultural area. However, it is weak in that it is not concerned with the broader questions of spatial dispersion of economic activity or with the dynamics of economic growth and change.

Alfred Weber's theory was more one of *industrial* location. But the emphasis on the firm's locational choice based on the lowest combination of production and transportation costs, the assumption of proportionality of transportation costs to distance and the neglect of the role of demand in industrial location decisions, makes Weber's theory as well inadequate in explaining the factors that influence the spatial pattern of activity distribution. This weakness of the theory remains even after Lösch's modification of it in terms of "profit maximization" as the criterion for locational choice, and his recognition of the importance of agglomeration economies.

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[1] J. H. von Thunen, *Der isolierte Staat in Beziehung auf Landwirtschaft und Nationalökonomie*; Hamburg, 1826; A. Weber, *Uber den Standort der Industrien*, Tübingen, 1909; A. Lösch, *Die raumliche Ordnung der Wirtschaft*, Jena, 1944.

More recent refinements of industrial location theory by Hoover[2] and Isard[3] and others suggest that the extent to which a firm can benefit from external economies in a particular location might be a more important consideration than transportation costs in locational choice. However, even after account is taken of all the relevant economies and diseconomies, the emphasis in the theory is primarily on the location of the firm, and it does not provide an adequate explanation of such phenomena as the changing patterns of spatial distribution of economic activity and the differences in the economic structure and performance of regions.

In other words, the classical theory with all its modifications remains to this day a theory which "presupposes economic rationality, completeness of information and a static situation and ignores the complexities of the broader framework of country and region". Futhermore, it is based on a predictable mobility of factors, inexhaustible entrepreneurship and, to a large extent, a fully developed transportation network. Needless to say, none of these conditions exists in developing countries and it makes this theory ill-suited to their conditions. For example, some basic economic factors such as transportation and processing costs, labour, etc., cannot be given in a "pure" form elaborated in advanced economies. In other words, the criteria and methods set forth in economic works on industrial location must be interpreted and revised if they are to be applicable to industrial location planning in developing countries. The following consideration will illustrate this.

As Alonso rightly noticed, one of the most widespread "half-truths" is that of the treatment given to the issue of transportation cost.[4] Normally when the problem of location is stated in the "classical form", everything but transportation cost is held to be constant and therefore the best location is naturally that which minimizes transportation cost. In contrast to the classical theory, in developing countries external causes often serve as more powerful magnets for attracting industry. Often, time rather than cost of transportation is the primary factor when considering distance. The time consumed in simple shipments can be surprisingly long and there is greater uncertainty as to the time of arrival. Delays of a different kind require then considerably larger investments of capital for inventories to ensure prompt and predictable deliveries. As a result, the additional capital costs (especially in view of the prevailing high interest rates) can easily exceed savings in transportation costs as such.

[2] E. M. Hoover, *The Location of Economic Activity*, New York, 1948, McGraw-Hill.

[3] W. Isard, *Location and the Space Economy*, Cambridge, Mass., 1956, MIT Press.

[4] W. Alonso, "The Location of Industry in Developing Countries", in, *Industrial Location and Regional Development*, Proceedings of Interregional Seminar, Minsk, 1968, p. 4, Alonso, *op. cit.*, p. 6.

Although the advantage of a distant location in a developing country may lie in lower wages and lower local transportation costs, it is very often counterbalanced by other powerful factors. The most vital of these are: inadequate amount of information which involves an element of uncertainty and consequently an increase in the cost of internalizing functions. By the latter it is understood that multifaceted activities are necessary for a firm in order that they may supply themselves. Among them: the necessity to become its own trucking and shipping agent, a warehouse or repairshop, etc.[5] These costs of internalizing functions could hardly be known at the time of choosing the location and they will be evaluated only according to probabilities. As a result, the known advantages of the distant location must be *very* large to offset a larger margin for safety normally used in assessing the upper limit of costs.

Another force, which could be called "cost of time in decision-making", attracts industry towards the known environment in developing countries. A very high output-capital ratio and rates of interest in combination with the difficulty in obtaining necessary information leads to a costly delay in getting started. The cost of these delays could easily be calculated in terms of lost production. Because finding the best solution is likely to cause delays, the choice is often made in favour of a satisfactory alternative.

Besides "modification" of above mentioned factors, there are two particular points which deserve to be mentioned here: labour cost and entrepreneurship. The experience acquired in developing countries indicates that frequently much of the labour needed for a new enterprise must be brought into the region because the local population lacks the necessary skill. Lower cost but less skilled labour is usually an advantage in the developing countries only in the relatively long run. In the first years one may expect lower cost labour to be inefficient not only because of lack of skills but also due to the lack of industrialized attitudes (absenteeism, tardiness, turnover, etc.).

As far as the entrepreneurs' problem is concerned, the classical theory provides for a complete mobility of management. Recently this part of the theory was subjected to constructive criticism on the grounds that it neglected the nature of industrial organization and thereby the framework within which location decisions are made. Among other comments, critics have questioned whether entrepreneurs in fact attempt to minimize transport costs and have supported this argument with studies showing that transport costs rarely occupy an important position in the cost structure of modern industrial companies. It is no accident therefore that majority of recent studies have attempted to develop new concepts which are more closely linked to behavioural and organization studies than to economics. This does not mean that existing theories have been rejected; however, the shift in focus is quite obvious. The most interesting of the new approaches (associated with the works of the Swedish school) have been based on the argument that personal contacts and information linkages are of major importance in understanding location decisions.[6] It has been shown that personal space preferences of managers and technicians might be in some ways a very powerful factor in the choice of location. Entrepreneurs like to remain tied to those places which offer amenities and exhibit great reluctance to move from major urban areas. Besides personal reasons (such as the sense of being at a place where things are happening!), it reflects an enormous importance of face-to-face relations for obtaining business information.[7] Alonso has suggested that personal contacts are even more important to businessmen in developing countries than in Europe or the United States. This is due to the fact that in developing countries most of the information is transmitted in a far less standardized way than in developed countries. Distance between persons is a more formidable barrier to communication than elsewhere, and this leads to the spatial concentration of those who must do business together.[8]

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[5] Large firms can adapt themselves more successfully to the conditions prevailing in remote locations. Their size affords them economies of scale for internalizing some externalities.

Despite the shortcomings of existing location criteria and concepts when applied to developing countries, they might provide a first approximation towards solving locations problems. Some of the "deviations" from "pure" theory have been mentioned. Although they are hard to measure, they must not be underestimated: actual experience says that they can in one case more than compensate for certain disadvantages or reverse—work in the opposite direction.

In conclusion it should be mentioned that very often actual location decisions in developing countries are made on the basis of motivations other than economic optimization (a situation which is normally neglected by the classical theory). National integration, political stability and defence are some factors which constitute an important, if not crucial, part of the locational considerations in developing countries. Some of these non-economic factors will be considered further on. However, "regardless of the strategy or prevailing political reasons, the country should at least be aware of the economic cost involved and exercise extreme care that the location decision does not seriously retard its economic development as otherwise neither economic nor political aims will be realized".[9]

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[6] T. Hagerstrand, *Innovation Diffusion as a Spatial Process*, Chicago, 1967, University of Chicago Press; G. Tornqvist, *Contact Systems and Regional Development*, Lund, 1970; Lund Studies in Geography, series B.N 35.

[7] It was described, for example, that the "Manhattan luncheon table" as a provider of ideas is far more valuable as a cost-saver to some types of pursuits than the lower costs of labour, etc.

[8] W. Alonso, *Industrial Location and Regional Policy in Economic Development* (Centre for Planning and Development Research, Institute of Urban and Regional Development, University of California, Working Paper No. 74).

## Regional development

The bulk of regional growth theorizing, though very conditionally, can be divided into two principal groups. Theories belonging to the first group devote special attention to the development within the individual region (and can be called inward-looking). The second group consists of the outward-oriented theories which primarily stress the mechanism underlying the phenomenon of the transmission of economic growth from one region to another. The roots of the first group of regional development theories might be found in urban economics, which consider the economic base of the city and activities that make it grow. Refinements of this theory are found in the works of C. Tiebout and D. North.[10] The theory is based on the assumption that the region actually disposes of an advantage strong enough to have its development rely completely on exports (very often mineral resources). The reasoning of this theory as presented by J. Hillhorst runs as follows: " . . . exploitation of natural resources increases exports and leads to an export surplus. The result will be an increase in the propensity to import as well as some inflationary pressure. The inflationary effect will drive up wages so that migrants are attracted. The increased imports will stimulate new activities in the field of import substitution. New enterprises will attract new migrants and thus a cumulative process is set into motion. All this can be realized provided that among the new industries there are some which diversify the exports of the region. If this is not the case or if the socio-political structure does not allow multiplier effects to take place, the region will inevitably slump back once the resources of the region are exhausted."[11] In addition, there remains the danger of a sudden change in the structure of demand, which would lead to the same result.

As Richardson puts it, "the value of the theory is that it emphasizes the importance of the 'openness' of regional economics and the role played by changing national (or extra-regional) demand pattern in regional growth".[12] However, this advantage very often is offset by the neglect of autonomous investment and technical progress and insufficient attention closely linked to behavioural and organization studies than to economics. This does not mean that existing theories have been rejected; however, the shift in focus is quite obvious. The most interesting of the new approaches (associated with the works of the Swedish school) have been based on the argument that personal contacts and information linkages are of major importance in understanding location decisions.[6] It has been shown that personal space preferences of managers and technicians might be in some ways a very powerful factor in the choice of location. Entrepreneurs like to remain tied to those places which offer amenities and exhibit great reluctance to move from major urban areas. Besides personal reasons (such as the sense of being at a place where things are happening!), it reflects an enormous importance of face-to-face relations for obtaining business information.[7] Alonso has suggested that personal contacts are even more important to businessmen in developing countries than in Europe or the United States. This is due to the fact that in developing countries most of the information is transmitted in a far less standardized way than in developed countries. Distance between persons is a more formidable barrier to communication than elsewhere, and this leads to the spatial concentration of those who must do business together.[8]

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[9] A. Kuprianov, "Growth Poles and Regional Policies", in: A. Kuklinski, R. Petrella (eds.), 1970, p. 250.

[10] C. Tiebout, "Exports and Regional Economic Growth", *Journal of Political Economy*, Chicago, April 1956, D. North, "Location Theory and Regional Economic Growth", *Journal of Political Economy*, Chicago, June 1955.

[11] J. Hilhorst, "Regional Development Theory: An Attempt to Synthesize", in: *Multidisciplinary Aspects of Regional Development* (Proceedings of the Annual Meeting of Directors of Development Training and Research Institutes, Montpellier, 1968). Paris, 1969, OECD Development Centre.

[12] H. Richardson, *Regional Growth Theory*, London, 1973, Macmillan.

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As Richardson puts it, "the value of the theory is that it emphasizes the importance of the 'openness' of regional economics and the role played by changing national (or extra-regional) demand pattern in regional growth".[12] However, this advantage very often is offset by the neglect of autonomous investment and technical progress and insufficient attention to the part played by capital accumulation and migration.[13] Besides, this theory is more or less applicable only to the regions rich in natural resources, a fact which limits its applicability to the rest of the regions which form a majority.

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[9] A. Kuprianov, "Growth Poles and Regional Policies", in: A. Kuklinski, R. Petrella (eds.), 1970, p. 250.

[10] C. Tiebout, "Exports and Regional Economic Growth", *Journal of Political Economy*, Chicago, April 1956, D. North, "Location Theory and Regional Economic Growth", *Journal of Political Economy*, Chicago, June 1955.

[11] J. Hilhorst, "Regional Development Theory: An Attempt to Synthesize", in: *Multidisciplinary Aspects of Regional Development* (Proceedings of the Annual Meeting of Directors of Development Training and Research Institutes, Montpellier, 1968). Paris, 1969, OECD Development Centre.

[12] H. Richardson, *Regional Growth Theory*, London, 1973, Macmillan.

A more general theory is based on the experience that as incomes rise, the demand for primary commodities goes down but new demands for products from secondary and tertiary sectors grow.[14] This theory proposes the thesis that regional economy goes through a sequence of stages which are very close to those introduced by W. Rostow, and it allows one to explain the tendency for urbanization as a result of specialization in agriculture and decrease in the relative importance of this sector.

The stages of development are the following: (a) subsistence economy; (b) a certain degree of specialization in a number of primary commodities; (c) a shift to secondary activities; (d) a shift to more sophisticated secondary activity; (e) an introduction of highly specialized services. Although this theory has an obvious "mechanistic" character by assuming a gradual (no jumps) move from one stage to another (in reality one can observe most of the stages in the same country at the same time), its main positive contribution is that it introduces the concept of specialization in agriculture and points to its consequences for the settlement pattern. By bringing into light this interdependence, it forms a kind of bridge between earlier theories (Losch, Christaller)[15] and some of the conventional thinking on the subject (Tinbergen).

The core of Christaller's central place theory was spatial distribution of the supply of urban services. His main concern was with the tertiary sector of the economy and he argued that central places (towns, villages), which provide an equivalent range of goods and services, will be located equidistant from each other since this assures that the population will be served with the minimum of transportation costs. Lösch's analysis extended the theory from service activities to manufacturing location and assumed the existence of hierarchical centres based upon market areas for industrial firms. Lösch's considerations coincide with Christaller's insofar as both conclude the necessity of one central place within a system of cities. However, each of them has serious restrictions: Christaller's theory is criticized for taking too much account of location with respect to the market, i.e., the consumer, while Lösch's is criticized on the grounds of even spatial distribution of demand, agricultural population and natural resources. Neither has a serious dynamic content and hence little value for exploring the regional growth process.

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[13] In many instances the popularity of this theory and its use in many econometric models can be explained by the fact that it provides the means of linking regional growth performance to GNP which presented a very appealing advantage under conditions of severe data constraints (see Richardson, *op. cit.*, p. 17).

[14] H. Perloff, E. Dunn, E. Lamparch, and R. Muth, *Regions, Resources and Economic Growth*, 1960.

[15] Lösch, *op. cit.*; W. Christaller, *Die zentralen Orte in Süddeutschland*, Jena, 1933.

Some ideas derived from these theories can easily be traced in Tinbergen's multisector model which represents an interesting approach to dealing with the double problem of allocating resources among sectors and regions (evenly spread agricultural production, ranking system for industries and cities, etc.).[16] The necessity of creating a hierarchical system of settlements obviously inspired by the Christaller ideas found its strongest reflection in E. Johnson's concept of spatial organization of development. After considering the Indian experience, he put it in the following way: "... the first task must be to identify the number of central places" and "... the development of graduated hierarchies comprising towns, small cities ... that can become production, trade and service centres ... ".[17]

The second, or "outward-oriented", group of theories is built around the set of processes by which growth impulses are transmitted or negatively, not transmitted, among the regions of the country. The bulk of research efforts here has been in the adaptation of neo-classical growth models to regional economics. The reason for this was the easy adaptation of the theory of factor mobility and theory of growth to the needs of regional economic analysis. However, in recent years neo-classical growth models have received heavy criticism at both the national and the regional level. The core of this criticism could be formulated as follows (Richardson's explanation): " ... the full employment assumption is not usually relevant to regional economics since to a market extent regional problems emerge because of substantial interregional differences in degree of resource (and particularly labour) utilization. Similarly, perfect competition cannot be assumed in regional economic analysis since space itself and the existence of transport costs limits competition ... ". It should be added that too much attention has been given to the interregional factor mobility and too little to the diffusion of innovation and technical progress.

The conclusions of two other models, namely "balanced" and "unbalanced" growth, have the direct relevance to our subject. One of the principal versions of the balanced growth approach stresses the existence of external economies which tend to be incorrectly estimated by private investors working on the principle of maximizing the commercial profitability of their own firm: "If ten projects could be undertaken jointly ... any one of them would be more profitable than the same project undertaken in isolation".[18] The conclusion reached is that a "big push" must be made and that investment must be planned in a centralized fashion.

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[16] See L. Mennes, J. Tinbergen, and J. Waardenburg, *The Element of Space in Development Planning*, Amsterdam, 1969; also H. Bos, *Spatial Dispersion of Economic Activity*, Rotterdam, 1964.

[17] E. Johnson, *The Organization of Space in Developing Countries*, 1970, p. 169.

[18] A. O. Hirschman, *The Strategy of Economic Development*, 1958, p. 55.

The main criticism of this theory is based on both economic and political considerations. The economic objection runs as follows: if the necessity for simultaneous investment effort is recognized, the question arises where to find the technical, financial, managerial and skilled labour resources necessary for such an effort to take place. From the political point of view, it is not realistic to expect co-ordinated investment in a number of related projects under the mixed economy conditions prevailing in developing countries.

The unbalanced growth strategy is based, on the contrary, on the recognition of the necessity to identify strategically correct sequence of investment, and it considers the "ability to invest" as practically the only operative constraint.[19]

Both strategies, though very important for the general orientation of the government in a developing country, can rarely be met in their "pure" form. A concrete approach is strongly influenced by the surroundings. However, for our purposes one implication derived from both theories is of particular importance. Neither of the theories suggests a dispersed allocation of new investment and does not imply "balanced" (i.e. "even") regional growth. Existence of external economies and economies of scale leads to "polarization" and to increasing differences in regional incomes in developing countries. The initial geographical concentration of industrial activity presents the logical consequence of either of the two major development "strategies" mentioned above.

A fundamental question that remains to be answered is that of whether development will in fact tend to concentrate spontaneously or whether a certain lessening of polarization and transmission of growth in space will come into operation in time.

In answering this question, the arguments of Ohlin's theory of international trade give some explanation, at least of a process typical for early stages of regional development.[20] In an early stage of development, interregional trade is supposed to be the most obvious reason for transmission of growth in space. In conformity with this theory, trade between a more developed and a less developed region is possible on the basis of comparative advantage, provided that transport and communication systems are scant and migration and capital flows do not take place. The effect of trading will be a certain degree of specialization in the less developed region. The increasing per capita income will allow for higher savings and investments and a process of development will be set into motion. Ohlin and other exponents of this theory normally leave it at this. Hilhorst has shown an obvious limitation to this theory when he foresaw and questioned the validity of the principle of comparative advantage as the sole basis of interregional trade. His argument is as follows: once trade between two regions reaches a certain volume, some forces start to work destroying initial conditions. These forces are found in the quite logical improvement of transport and communication. "Once these systems are in better shape, the immobility of factors of production and frontiers of the two regions start to disappear and factor endowments tend towards equalization. The importance of the comparative advantage of the poor region starts to shrink . . ."[21] Unless a very clear advantage exists vis-a-vis the richer region, the poor region enters into a "period of economic uncertainty".

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[19] R. Helfgott and S. Schiavo-Campo, "An Introduction to Industrial Planning", *Industrialization and Productivity Bulletin*, No. 16, 1970.

[20] B. Ohlin, *Interregional and International Trade*, 1933.

Myrdal, Hirshman, Johnson, Stöhr have given serious attention to this "transitional" period in the development of a region.

One type of argument is very close to those used in a general equilibrium theory. According to this argument, the advantage of the "developed" or "core region" is of a temporal character. As more investment funds are attracted and employed, the marginal efficiency of capital will decline and when yields fall, it would tempt investors to redirect their funds to spatial frontiers. Reflecting a conviction that there is an unfailing tendency of every economy to find an equilibrium, this school, as Friedman has put it, "soothers policy makers by reassuring them that the unhindered operation of market forces will inevitably tend to establish a spatial equilibrium".[22] However, evidence of the newly developing countries does not support the principal equilibrium theory's assumption that capital will spontaneously flow from lower to higher productivity areas. On the contrary, the diminishing returns for investments in "core" regions or metropolitan areas, rather consistently seem to be offset by growing external economies or are neutralized by technological or managerial innovations. Continuing growth of "core" centres not only drains off the best manpower from "peripheries", but restricts investment to more dynamic centres. Since the periphery has ordinarily only primary products to exchange for centre-produced manufacturing goods, "the peripheries find themselves in a quasi-colonial relationship vis-a-vis the more prosperous centres."[23] A theory predicting per capita income divergence has been suggested by Myrdal, and it is known under the name of cumulative causation model. Myrdal argued that the play of forces in the market normally tends to increase, rather than decrease, the inequalities between regions and described regional growth as a disequalibrating process. The terms "backwash effect" was devised by Myrdal to define this process by which regional benefits may be backwashed out to other regions due to the lack of regional decision-making power and to the out-transfer of most of the returns to production factors.[24]

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[21] J. Hilhorst, *op. cit.*, p. 24.
[22] J. Friedmann, *Regional Development Policy: A Case Study of Venezuela*, p. 14.
[23] Johnson, *op. cit.*, p. 209.

The opposite process, that is, the spread of development impulses between spatial units, was called "spread effect".[25] Acting simultaneously, these effects determine, in fact, the development (or lack of it) in the region. Depending on whether the strength of the backwash effect is greater than that of the spread effect, the region will either grow faster than the national average or alternatively grow slower or even decline in absolute terms.

Friedman's concept of the centre-periphery model primarily based on the experience of developing countries is very similar to that of Myrdal. Both approaches stress cumulative and self-reinforcing advantages of the initial location and limited advantages of backward regions normally insufficient to offset agglomeration advantages.

Having considered the national growth process in developing countries over a period of time, Friedman argues that it can be viewed as a sequence of the following four stages, each of which marks a major step towards progressive integration of the space economy:

1. Little or no interconnexion between independent local centres in the pre-industrial society;
2. Development of the centre-periphery relationship, disturbance of the economy's spatial structure due to the industrialization. Growth, spatially concentrated in a single (or two) centres, with the rest of the country takes the form of polarization flows towards the centre;
3. Transitional stage characterized by the appearance of peripherial sub-centres. However, most of the areas are still isolated and untouched by development;
4. The integration of all regions into the national economy takes place through the "matrix of urban region". Here the difference between the assumptions of the equilibrium theory and that of Friedman is obvious.

On the assumption of the first theory, it could be argued that if nature were left to take its course, it would result in spatial equalization of rates of return on capital. The governments in developing countries would not need to embark on "induced" development: no intervention is needed because the true productive potentials of the regions will be discovered by market forces. The second conclusions calls for a very serious intervention from the state towards introducing planning and policy measures aimed at modernization of the peripheries of the developing countries and stimulating propagation of the economic development.

At this point it has become clear that the classification of theories accepted at the beginning (inward-looking and outward-oriented) as well as separate consideration of "pure" locational theories and those of regional growth were rather artificial. The attempts to reconcile the theory of industrial location and the theory of regional growth manifest themselves more and more distinctly. The difficulties for this integration are due to two major obstacles. Richardson's argument: "First, industrial location theory is by definition a spatial theory whereas regional growth analysis is usually based upon the assumption that the interregional system consists of a set of spaceless regions. Second, the dynamic aspects of industrial location are grossly underdeveloped so that the analyst is faced with how to relate static models of location to the dynamics of the regional growth process."[26] In principle there are two possible lines of linking location with growth. The first rests on that version of locational theory which puts more emphasis on behavioural aspects of individual decision-makers (with its emphasis on reducing uncertainty and risk aversion and subsequently the attractive power of agglomeration economies) as approve to the classical profit-maximizing location models of the past. The second possibility arises when the concept of the "growth pole" is used to explain the spatial dispersion of economic activity and process of growth.[27] This concept attempts to explain the process of economic growth and change by employing an "unbalanced growth" model. The theory draws from many earlier works in such areas as industrial location, industrial complex analysis, central place theory, spatial diffusion of innovations, etc. A basic notion behind the growth pole concept is that economic activity tends to agglomerate around certain focal points, very often urban areas and induce further development throughout its zone of influence. Showing how economic activity tends to form in clusters, the theory does not adequately explain the causes for the spatial patterns of activity distribution and the factors that influence regional growth and decline. Despite all these obvious drawbacks (and what is particularly important for our discussion), growth is always conceived spatially. For instance, it includes the notion of "technical polarization", locational agglomeration consequent upon the location decision of firms and that of geographical polarization of development.

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[24] G. Myrdal, *Economic Theory and Underdeveloped Regions*, London, 1957.

[25] These terms coincide with the effects mentioned by Hirschman: the "trickling-down" effects and the "polarization" effects, see Hirschman, *op. cit.*, p. 28.

The similarity between the two theories mentioned above is indicated at a too general level to be of practical value to the regional policy maker. Further work is needed to bring together these components. However, in the author's view, this is the only way of making regional growth theories operations and of more value to the practitioners.

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[26] H. W. Richardson, *Regional Growth Theory*, London, 1973, p. 54.

[27] There is no attempt here to survey the voluminous literature. See on the subject, J. Boudeville, *Problems of Regional Economic Planning*, Edinburgh, 1966; T. Hermansen, "Development Poles and Related Theories: A Synoptic Review", in, N. Hansen (ed.), *Growth Centres in Regional Economic Development*, New York, 1972.

## The main issues of regional development

Perloff distinguishes between the "political" and the "technical" functions of regional planning.[28] Under the "political" functions he assumes the setting of objectives, the formulation of alternatives and the definition of criteria for choosing between them. Under the "technical" issues he includes analytical techniques of regional planning (information system, programming techniques) and operational techniques (policy measures and instruments).

Here we will deal mainly with Perloff's "political" functions and policy measures. Among the issues pertaining to analytical aspects of the problem only very brief consideration will be given to the issue of establishment of information systems. The reason for leaving programming techniques aside is the lack of universally recognized methods and models operationally applicable to the conditions of developing countries.

Before looking at objectives, policy matters and other related issues of regional development, it seems useful to elaborate on the issue of the definition of region.

## Region: definition

In regional economics a region is understood to be a subnational areal (territorial) unit which is larger than the single community but smaller than the country.[29] Until now there is no universally recognized definition of the region. As Richardson puts it, "many hundreds of thousands of words have been written on this topic without coming to a fully satisfactory answer. The only safe statements are: there is no unique definition . . .".[30] The bulk of recent theoretical thinking on the subject is characterized by either the recognition of the "objective existence" of the regions as economic sub-systems or by seeing the problem of region definition as a purely analytical device accepted for practical purposes and, consequently, the process of delimiting regional boundaries as a function of the problem in hand. Following the first approach requires a thorough elaboration of a complex combination of factors (ranging from ecology to retail marketing) to form a scientific basis for regionalization. The attractiveness of the second approach (based on choosing a single but important factor) is in its obvious simplicity; however, very often it leads to over-simplification of the issue and very arbitrary decisions. Recent UN publications seem to recognize region as a physical and socio-economic entity which "was not a matter of option or conceptual choice, but a reality which must be faced, coped with and shaped, in accordance with social needs and requirements."[31] However, the same publication failed to elaborate the concept of the region for operational regional planning purposes. Instead, the document concludes with a rather vague recommendation that "a workable approach to a region as a planning concept must reflect historical realities, current dominating features and socio-economic functions, as well as existing and anticipated socio-economic requirements."[32]

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[28] H. Perloff, "Key Features of Regional Planning", *Journal of the American Institute of Planners*, 24 (1968), No. 3.

[29] In international economics, a region might refer to a group of nations, while in the United Nations publications the term region normally refers to a continent—a large geographical area covered by the activity of the respective UN regional economic commission (Africa, Latin America, Europe, etc.)

[30] Richardson, *op. cit.*, p. 6.

Failure to elaborate a unified and clear-cut approach to the problem has led in practice to very confused system of region delimitation, which very often has nothing, or very little, to do with the above mentioned theoretical considerations. Very roughly existing methods of delimiting the boundaries of a region can, according to Richardson, be grouped under the following three categories.[33]

> *Homogeneity*—The area is considered homogeneous in respect to a certain factor (dominant industry, specialized function within the national economy, per capita income level, employment situation, language group);
>
> *Nodal concept*—Each region has one or more cities or dominant nodes. The criteria for inclusion of the area into the region is based on the "principle of dominance" or the "strength of links" between the centres within the region or with the centres or nodes outside (limits of commuting to work is a special case in this concept);
>
> *Administrative boundaries*—Political-administrative regions are defined by law and the state apparatus. The unity of the region is supposed to be given in terms of policy instruments, tax rates, etc. Such a region is called a programming or planning region. The obvious advantage of this approach is that it provides the planner with available data that conform to administrative boundaries, not saying that sometimes the existing administrative divisions of the country, whatever they might be, are the *only* regional classification available.

In general, the degree of freedom in delimiting regions depends to a great extent upon the level of development already achieved by the developing country. Strictly speaking, in too many developing countries economic regions (in the sense of regions whose components were structurally interdependent) do not actually exist. In those countries which are at a higher stage in their development, the process of creation of economically viable geographical units is at an advanced stage. However, as countries develop the relative weight assumed by the factors which form the basis for classification of regions differ. It was observed that in the historical course of economic development, the role of natural factors in spatial shaping (including administrative) has been declining, while the impact of the development activities themselves has been growing. One implication of this observation is of particular importance to the administrative approach to regionalization. As the economy matures and new, earlier non-existent economic factors come into play, administrative boundaries (often proceeding from a broad classification of geographical nature) might become inconsistent (if not contradictory) with "invisible" boundaries derived from economic criteria, reflecting in turn the changing economic conditions in the country. This suggests that administrative arrangements should be periodically revised or adjusted. Though the feasibility of this is doubtful, it brings up the issue of the necessity to accept a dynamic and long-term approach to regionalization.

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[31] Regional Planning Seminar, *op. cit.*, p. 6.

[32] *Ibid.*, p. 6.

[33] Richardson, *op. cit.*, p. 7.

### Regional versus national objectives

As the preceding discussion suggests, the regions are to be regarded as economic sub-systems of the national economic structure. It should also be stressed at this point that each individual region is much more "open" than a national system in the sense that a higher proportion of total commodity and factor flows are exported and imported from a region than in the national economy. The most immediate observation is that national and regional objectives and policies are very closely interwoven.

In a great many developing countries, the main issue of regional development policy is its relation to national policy. Two principal policy goals are involved in these policies; efficiency and equity. By efficiency is meant national economic growth; by equity, a more equal distribution of income. Theoretically, as well as very often in practice, relations between the goals of national and regional policy may be conflicting. This is particularly true in the initial stages of industrialization. The following are some examples:

The introduction of import restrictions for food at the national level to protect agricultural prices may cause serious regional difficulties in regions with little or no agricultural potential: national industrialization policy, be increasing mobility of population, contributes to local congestion problems in the main metropolitan areas, etc. The lack of regional integration might be a major cause for an unfavourable national exchange balance. As a broad generalization, one can accept the consolidation of the issue made by H. Siebert: "A harmonious relation prevails if regional growth policy tries to increase regional output—and if the marginal productivity is still below the marginal productivity in the other region. A conflicting relation prevails if regional planners try to push regional output to a point where the marginal productivity in the region will be lower than in other regions."[34]

[34] H. Siebert, *Regional Economic Growth: Theory and Policy*, 1969.

It has been repeatedly indicated that the regional policy—in order to be successful—should take the national development strategy as a general guide.[45] The main goal of economic development as confirmed by the majority of national plans, is that of achieving the fastest economic growth and *national* welfare. Obviously, it means that the goal of an interregional equity comes second even in countries where this objective is politically paramount. As a result, an uneven spatial development pattern being economically more feasible prevails in developing countries. In short, three main factors constitute a basis for early concentration of economic activity: (1) initial markets of the national capitals; (2) possibilities of using scale economies; (3) availability of foreign-based innovations. No doubt at this moment it would be hard to justify a development programme for a region which served to weaken the national economy or slow down the rate of growth of the total economy. Thus, as Stöhr points out: "Planning a 'national' policy for regional development (at this stage—A. K.) might be an interesting academic exercise but it will hardly be able to gain effective political support".[36]

At a later stage of national development, further industrialization might become impeded by (a) exhaustion of the internal market for consumer goods or (b) a decreasing marginal productivity of already tapped natural resources This stage is characterized by an attempt to shift towards the import substitution of capital goods and other durables and to the substitution of exports of raw materials by that of processed material and to the establishment of basic industries. On the whole, this signifies an attempts to "internalize" the basis of national development. It is obvious that at this stage speaking very generally, the conflict between national and regional goals of development diminishes or at least the incompatibility between two objtctives: efficiency (national) and equity (regional) might lose their strength. By this is not meant that from now on unfettered play of the price mechanism or market forces will lead to optimal allocation of resources or that Myrdal's "spread effect" of development will arise. This is true only in a particular case of "complementarity" between core region and periphery mentioned earlier. In all other cases, prescriptive intervention from the government, if it likes to diversity the spatial system, becomes imperative. This does not mean that a new policy should be one of equal distribution of resources, incentives and benefits. What is required in conformity with the socio-economic concept of development is to distribute them "strategically in the light of certain variables, such as (a) the assistance each region will need in order to become integrated into the main stream of national life; (b) the advantage to be gained

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[35] See Minsk Seminar Report, p. 25; Regional Planning Seminar, p. 5.

[36] W. Stöhr, "Regional Planning as a Necessary Tool for the Comprehensive Development of a Country", paper presented to the International Symposium Training of Planners for Comprehensive Regional Development, Warszawa, 1971, p. 8.

by the country from exploiting untapped resources . . . ; (c) the need to bring about changes in the national spatial structure".[37]

However, the case where the turning point in the government's policy coincides with the moment when economic forces have already started to shift a little in favour of less developed regions is probably an exception rather than the rule. In this "ideal" case, policy impact is likely to have greater effect since it is reinforced by certain economic advantages. In practice, unfortunately, political factors and pressure for government intervention exerted by influential local groups much too often force the authorities to shift to "equity policy" too early. Thus, conflicts and differences between national and regional objectives are hardly avoidable; policy measures should therefore be prepared for reconciling goals and priorities of these two levels.

## Policy measures

The measures that have been applied to carry out specific regional policies are very diversified. They vary both in the degree of government interference and in basic objectives they pursue. However, before classifying them in the main categories, one observation seems to be relevant at this point, that is to make a distinction between policy instruments available at the regional level and those at the national level.[38] Even within the federal system, the regional policy-makers do not have at their disposal the arsenal of instruments which national governments possess. These include not only the tariffs and exchange control on monetary and capital flows which affect the balance of payments, but also many types of internal measures, such as monetary instruments, changes in central government tax rates, etc. The obvious narrowing of the range of available instruments applies equally to commodity and factor flows. Continuous immigration or commuting flows for work are the examples of the latter case. Besides, the absence of barriers between regions makes it possible for interregional flows to go unrecorded, a fact which in the case of its having an adverse effect on the economy, can hardly be offset by counteracting policy instruments.

The whole arsenal of policy measures available to regional policy-makers can be classified according to two different criteria (a) intensity of government interference and (b) developmental determinants of regional growth. The first criterion "lies mostly in the sphere of public and private interaction and reflects different roles assigned to those sectors in the course of development. The second criterion when applied to policy instruments classifies them in the light of their influence on growth determinants existing in the regions.

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[37] R. Utria, "Some Social Aspects of Regional Development in Latin America", *International Social Development Review*, UN, 1972, p. 53.

[38] The descent from the national to the regional level, no doubt very often means the change in the *dominant* policy objectives. For example, controlling inflation or persuing stabilization goals which might be objectives of a nationwide policy are never the main preoccupation of regional policy-makers.

If instruments are classified according to the way and intensity of government interference, the following three types of approaches could be distinguished: "negative" (or "prohibitive") which merely restricts certain actions; "permissive" which try to induce firms to act; the third involves more direct action from the government.

The "negative" approach involves the mere prevention of free establishment of firms in regions which are considered relatively too developed or congested. Measures of direct control such as a licencing system might be the most efficient instrument of this type of policy in relatively developed economies. However, sufficient empirical evidence available shows that in a developing economy where the difference in the attractiveness of different regions is very wide, this type of direct control may, and in fact does, reduce total investment. Particularly small firms, if unable to become established in the regions where it is clear that others are surviving, are very unlikely to move into non-industrial regions. Direct controls over migration have been attempted only in several centrally planned economies. This allows the planning authority to restrict migration to large cities and to facilitate the policy of industrial decentralization. It seems that this experience has some relevance to developing countries, however, the enormous task of managing such controls must be recognized.[39]

The permissive policies involve either tax policies or the provision of various sorts of social overhead capital (SOC) which lowers costs. Not being able to enter here into the rather controversial arguments developed over the issue of necessary sequence of SOC investment and investment in directly productive activities (DPA), we would like to associate ourselves with the idea that preference should be given to the sequence of investment that maximizes "induced" decision-making. This is in line with the belief expressed by Hirschman that it is more the lack of entrepreneurship to exploit potential savings that holds back development than other bottlenecks, and that the government should above all try to establish mechanisms to induce the utilization of these resources.[40]

In other words, supplying SOC ahead of demand will induce far less private investment than letting SOC investment itself be induced by a shortage, making the initial step in the sequence investment in DPA. This is a particularly important consideration in regional development since it is argued that a government policy for a mere provision of SOC will not be enough to get entrepreneurs into a region, but as experience shows, might be detrimental to the further development of the backward region. The transport investment, aimed at improving the access of the depressed region to the outside world may (unless countervailing measures are taken!) facilitate easier resource withdrawl and provoke the "backwash effect". Final adverse effect on the regional economy might be quite a surprise to the original policy decision.

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[39] J. Friedmann, "The Implementation of Regional Development Policies: Lessons of Experience", *International Social Development Review*, UN, 1972, p. 100.

[40] Hirschman, *op. cit.*, p. 33–97.

More direct government involvement is associated with tax policies (income and profit tax) or generous depreciation allowances on new investments. Empirical research shows that fiscal incentives in one form or another are utilized in most developing countries as a means of inducing industry to settle in particular regions. In Brazil, for example, a deduction of up to 50 per cent of taxable income is allowed to those who invest in approved projects. These tax savings must be deposited in the Brazilian Northeast Bank and if they are not invested within three years in a project in the Northeastern Region, they revert to the national treasury. Being the most popular devices for promoting development into less developed regions, accumulated experience has provided rather contradictory evidence concerning their effectiveness.[41] Two limitations observed by Friedmann are worth citing:[42]

1. Financial incentives may encourage industry to locations that are inefficient and thus reduce the overall competitive position of national industry in foreign markets;
2. Withdrawal of financial incentives after the initial starting-up period may lead to a shift in industries out of the region and back to the core areas of the country. Should this happen, a policy of permanent subsidization might be required, resulting in a structural distortion of the resource allocation pattern.

In reviewing the policies used to promote regional decentralization, the UNIDO Seminar on Industrial Location and Regional Development expressed its consensus in general that "these incentives are marginal and are not usually determinants of location decisions . . . it is only when rough balance exists between the attractiveness of two or more locations that such incentives become really significant".[43]

The followlng main categories (by no means complete) are obtained if policy instruments are classified according to the growth (developmental) determinants:

(a) Labour supply measures. Under this heading all policy variables are included which influence the regional labour supply;

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[41] Exemptions or reductions in local taxes are likely to be much less effective than exemptions from central government taxes. The reasoning of the local authority goes as follows: it is better to have a non-tax-paying industry than no industry at all. Besides, the reduction granted by one local taxing authority is likely to be quickly matched by other localities. It makes these measures very insignificant in most locational decisions.

[42] Friedmann, *op. cit.*, p. 102.

[43] Minsk Seminar Report, *op. cit.*, p. 44.

(b) Capital supply measures—set of instruments which affect the availability of investment (including supply of social infrastruture capital);

(c) Technical progress instruments—all measures which speed up the rate of inventions and innovations and their embodiment in capital and labour;

(d) Demand influencing instruments (internal and external).

Experience shows that whatever growth determinant is supposed to be influenced, the application of any of the above mentioned instruments will not be successful unless planners provide for some complementarity in their utilization. Examples of the failure of direct public investment programmes to induce economic growth and attract private investors are well known. However, when supplemented by additional incentives, especially of a financial nature, they succeeded in establishing conditions favourable to set in motion a self-sustaining process of growth in the region. Similar problems have been caused in many instances when the attempts to effect the availability of investment have been undertaken through the application of the growth-pole strategy. Concentration of public investment in a few locations, aiming at the transformation of the surrounding hinterland has led in practice to the promotion of enclave operations benefiting primarily outside interests and increasing internal regional disparities. Yet the effectiveness was conditioned by too many more important characteristics: (a) functional interrelation among the existing and newly created activities in the area and (b) innovative capacities of new activities.[44] Unfortunately, these and many other reactions of the spatial system to the isolated policy measures came as a surprise to the regional planners in developing countries. However, at least one positive outcome of previous experience is obvious: policy measures, if expected to be effective, should complement each other, be co-ordinated and brought into consistency with the overall development policy of the country.

## Institutional Aspects and the Information System

The success or failures of the regional development strategy formulation and implementation depends to a great extent on the institutional setup established in the country and on the information available. "In the analytical phases of the work the principal difficulties are the *lack of information* and the problem of definition of regions; and in actual planning and implementation of policies for regional development a major impediment is often the weakness of regional and local bodies . . . ."[45] Regional development planning, wherever it exists, operates within the same too well-known administrative and organizational constraints as national or intersectoral planning. One of the most characteristic features of both of them is that they are not joined to effective power for implementation. "In most countries, the role of national planners is to advise on policy. Yet, being divorced from the instruments of action, national planners have no specific means for getting their advice accepted."[46] This rather common situation is much worse at the regional level, because very often the existing administrative/institutional system of the country is either overcentralized and does not provide for the existence of the local governments and agencies or limits their activity to the preservation of law and order and collection of governmental revenues. In other words, the problem encompasses also the issue of administrative decentralization as a pre-requisite of genuine regional development. Or as Chen states: "without administrative decentralization there can be no decentralization or economic expansion".[47]

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[44] J. Lasuen, *A Generalization of the Growth Pole Nation*, 1971.

[45] *Journal of Development Planning*, No. 3, p. 103.

Up to now the corporate approach to regional development in developing countries has been the only example which embodied the principle of fusing planning with effective power. The well known examples are Guyana Corporation of Venezuela, Canca Valley Corporation of Colombia and SUDENE in Brazil. Being regionally based, these semi-autonomous agencies of the national government succeeded in obtaining the support of local population and became more or less permanent features of the national planning system.

The common argumentation against this type of institutional machinery runs as follows: first, it has its justification only in the imbalanced concept of regional development which is not accepted by all the countries. In practice, when relying on this policy a country undertakes several concerted efforts which means that certain regions are favoured at the expense of other areas. Second, the establishment of a very powerful institution contains a hidden danger of regional separatism. Jealous of their prerogatives, national government are likely to avoid this threat to national unity. Third, in all known cases, the corporate approach to regional planning was concerned with the short-term strategy without due consideration to the long-term objectives of national development.

The problem of creation of an adequate information system is very closely related to the existing administrative and planning machinery in the country. Here again, the problem seems to be particularly acute at the regional level.[48] At the national level, systems of national accounts provide at least a framework for collecting and organizing information, but no such generally accepted system ever existed for regional planning. The second obvious principal reason is the weakness of regional planning itself in developing countries. In order to determine the requirements for regional statistics, one should be aware of the models and methods to be employed in the planning process which in turn are still very much in flux.[49]

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[46] Friedmann, *op. cit.*, p. 95.

[47] C. Chen, "Estrategia del desarrollo regional caso de Venezuela", in R. Utria, *op. cit.*, p. 53.

[48] Minsk Seminar, op. cit., 694. p.; also W. Stopler, *Planning Without Facts*, for general discussion.

Information requirements as seen from the point of view of the planning body can be partly and by breaking down the regular information into relatively small areal units not to mention overall strengthening of the national systems. The main limitation of this way is the lack of qualified staff for gradual re-organization in the collection and classification of data and its geographical identification. Another problem is the delineation of regions for this purpose, which has been dealt with above.

Obvious incentives for improved information systems might be provided through modern data processing technology (availability of information in machine-readable form) and the availability of the computer itself. "The introduction of sophisticated techniques in data collecting, processing and dissemination was thought to have better potential in developing countries than the traditional techniques".[50] However, the full use of new technological possibilities should be carefully estimated by assessing the cost and benefits of introducing a modern system.[51]

It should be stressed that collection of statistical data or a tendency to promote regional data banks must avoid the temptation to transform them into unselected data sums where all possible information is stored. A regional data bank would be successful only if the information collected and processed is carefully selected following the criteria of its application in planning and decision-making. As it has been mentioned earlier, the content of the data bank as well as more specific requirements for information could be formulated only in the light of concrete goals of regional planning and actual conditions of the country.

## Social Dimension of Regional Development

Until recent years, it was common to draw a distinct line between economic phenomena, on the one hand, and social ones on the other, opposing social development to economic development, economic objectives to social objectives, etc. This thinking has influenced planning methods and techniques on the national level in both developed and developing countries as well as in the work of the United Nations. Reflecting this understanding, the common approach to social development (including that of the United Nations) focussed primarily in the past on the improvement of levels of living on a sectoral basis: through the promotion of health, education, social welfare by means of public programmes. The requirements in these fields were supposed to be met through provision of financial grants and loans. However, with the passage of time, it became explicitly recognized that only those countries which possessed social structures, institutions, human and technical resources were well-adopted for purposes of generating and maintaining high rates of economic growth, were able to benefit from these activities. In contrast, the developing countries where social institutions and non-economic resources, if any, were in their infancy, were not able to effectively absorb the outside aid. Even in the developing countries that have achieved rapid rates of economic growth, there has been a tendency for levels of living to remain static or in some respects to decline.[52] Although quite obvious at the national level, these discrepancies in levels of living very often manifested themselves in a more acute form at the regional level. One of the reasons for it is that socially disadvantaged groups in the populations of developing countries are frequently concentrated mainly in one region, socially privileged groups in another. Or as it has been noted in one of the UN documents, "it is at the regional level that people live and come into contact with social and political institutions; this is where they participate in or are excluded from productive activity through their purchasing power, where their demand for goods and services makes itself felt and where the solutions to the complex problems of development put forward by the public authorities and the economic and social system succeed or fail."[53]

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[49] The reverse is true as well: simplification of the modern methods is required by the information available. Facts are available in the case where an attempt to use an input-output technique for regional planning showed that 90 per cent of the matrix cells were empty (Minsk Seminar Report, p. 695).

[50] Interregional Symposium on Training Planners for Comprehensive Regional Development, Warszawa, 1971. p. 21; Regional planning Report of the Interregional Seminar on Development Planning, Ecuador, 1971, p. 21.

[51] For more details see: C. Leven: *An Analytical Framework for Regional Development Policy*. 1970.

The conventional approach to the regional planning was centred around the idea of investment placement and took the form of projects for the exploitation of natural resources. The experience of many developing countries, particularly those in Latin America, shows that this approach—although perhaps helping to strengthen the national economy very often led to establishment of typical industrial enclaves which by themselves did not generate a new social dynamics; the regions remained socially stationary. In a number of countries, the excessive concentration of growth in a few centres or areas (where coastal areas or metropolitan centres are developed and the interior left economically and socially marginal were accompanied by acute disparities in income and development levels.

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[52] There is evidence that in most cases development is accompanied by an absolute as well as a relative decline in the average income of the poor. "An initial spurt of dualistic growth may cause such a decline for as much as 60 per cent of the population. The absolute position of the poorest 40 per cent apparently continues to worsen as countries move toward less dualistic growth patterns." (See I. Adelman—C. Morris: *Economic Growth and Social Equity in Developing Countries*. Stanford, 1973, p. 189).

[53] "Development as a Social Phenomenon", ECLA working paper No. 12, 1968.

The existence of more dynamic regions and those lagging behind would not have been a very undesirable phenomenon if the dynamic regions were capable of fully absorbing the economically active population of the rest of the country. However, this is not the case. In most cases, dynamic regions and metropolitan areas were able to absorb only a small proportion of migrants from rural areas. Massive migrations from rural to urban areas amounted not only to unemployment in these areas, but turned the urban areas into centres of profound social conflicts. "At the same time, the vast and largely neglected peripheries, dominated by and dependent upon cities both economically and politically, tended to stagnate or even deteriorate, intensifying the social conflict still further."[54] in some countries, relations between various regions based on the pattern of domination and dependence, when wealth and power are concentrated in one region while rural regions serve as sources of cheap raw materials and labour are characterized by the term "internal colonialism".[55]

Considering the great importance of the above mentioned aspects for the development process at both the national and regional level, the predominantly economic and technical criteria in development policy have begun to change. A given level in the human condition is now considered to be necessary for a sustained and adequate economic growth of the nation. The shift in focus from *things* to *people* has led to the recognition of social expenditures (previously labelled "unproductive") as equally important developmental expenditures, compared with economic ones.

The essence of this new approach is that development is now considered a single process involving the transformation of a whole social system, of which economic activities and relations are a part. Or, according to a UN report: ". . . economic phenomena are in fact social phenomena: they are social in nature, are socially conditional and have social consequences . . ."[56]. In short, social objectives of development conceived now in terms of: (a) wider and increasing participation in the development effort; (b) wider sharing of the benefits of development; and (c) wider participation in decision-making. These broad general objectives, when applied to the regional development, inevitably lead to a recognition of the regional planning as a redistributive mechanism which should become a rational force aimed at equalizing the economic, political and social weight of the various groups. A feasible degree of decentralization of economic activity could facilitate the reconciliation of various social interests by creating opportunities which would enable all social groups to share relatively equally in the benefits of development.

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[54] Regional Planning, Report of the Sixth Interregional Seminar on Development Planning, Quito, Ecuador, 1971, p. 12.

[55] See P. Gonzalez-Casanova, "Internal Colonialism and National Development", In: I. Horowitz—J. de Castro—J. Gerassi (eds.): *Latin American Radicalism*. New York, 1969. Other terms to describe internal distortions are: "parasitism", "localism" and "privilegism".

[56] Report of the Meeting of Experts on Social Policy and Planning, Stockholm, 1969. Document No. E/CN/445, p. 3.

## Urbanization and Regional Development

Until recently most of the studies on urbanization considered the subject within a rather narrow framework of issues pertaining to the set of problems dealing with the "internal" life of urban centres: urban housing, services, transport, land use and employment. Very frequently, the city has been treated as an isolated organism with a life of its own, independent of the regional and national economy. Similarly, regional planners often ignored intra-regional spatial differentiation. As a result, urban-industrial development was regarded as only an auxiliary element in the build-up of a region's economy, mainly in terms of inter-industry linkages or other narrowly-defined technological external economies.

However, recent thinking on the subject is characterized by clearer understanding of the relevance of the urban dimension of the analysis of regional development. The main reasons behind this are: (a) recognition of urban centres as main "scale implicators", (b) consensus concerning the generative transformation impact of cities on surrounding regions associated with social and cultural change.

A detailed discussion of the empirical experience and research on the subject of urbanization is not possible here; rapidly increasing volume of publications on developing countries' experience includes several thousand references and too many crucial questions remained unanswered.[57] Instead we shall simply identify two principal issues of urbanization which have the most direct relevance to the regional development problems.

### I. *Level Development and "Over urbanization"*

It has been demonstrated by Sovani and Kamerschen that industrialization and urbanization are highly correlated, particularly in early stages of economic development.[58] The pattern of primacy evolution is very similar to that of recent theoretical formulations on the transformation of national spatial systems. It is "one in which (a) primary increases with development during its early stages, (b) reaches a peak during the middle or transitional stage of development, and (c) then begins to decline with further development during its more advanced stages".[59]

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[57] P. Bairoch, *Urban unemployment in Developing Countries*, Geneva, 1973. ILO, also United Nations: Growth of the World's Urban and Rural Population, 1920–2000. Sales No. E.69.XIII.3.

[58] N. Sovani, "The Analysis of Overurbanization", *Economic Development and Cultural Change*, January 1964 I. Kamerschen, "Further Analysis of Urbanization" *Economic Development and Cultural Change*, January 1969.

The rapidity of urbanization in the developing countries (the urban population is currently growing about 15 per cent a year or doubling in about 15 years) led to the situation where they have a higher percentage of population living in cities and towns than is "warranted" at their stage of economic development. The term used to describe this phenomenon is "overurbanization". The chief argument behind this thesis is that at comparable levels of urbanization already developed countries had a correspondingly greater proportion of their labour force engaged in non-agricultural employments. For instance, if in Europe in 1900 and 1920 the urban population rate (percentage) was 24.0 and 29.0 with the corresponding per cent of active population in manufacturing 20.0 and 21.0, in developing countries the ratio was 16.7 to 9.0 in 1900 and 21.0 to 10.0 in 1920.[60]

According to this view, attention and investment have been unduly concentrated in urban areas and on accompanying capital-intensive projects, which "while they may provide the greatest returns on capital, do not maximize the use of the nation's total resources. On more extremely, the urban population is increasingly a parasitic growth, its priviledged position based on exploitation of the rural surplus."[61]

The supporters of the overurbanization thesis argue that cities in developing countries "came too soon" and often suggest the introduction of strict policy measures to arrest further city growth. The opposing view sees the urban concentation as a necessary condition for economic growth. The main arguments of this school of thinking are the following: urban concentrations are characterized by higher per capita income levels and urban employment is found to be much more productive than the pre-migration employment. Social overhead cost (which is sufficiently higher in urbanized areas) can not cancel the gross-income advantage. Based on economic efficiency, any policy towards arresting city growth is detrimental. In addition, any decentralization policy (either of investment or population distribution) can not be encouraged.[62]

Similar divergency in opinions is obvious when one turns towards the causes of overurbanization.

## II. *Rural-urban Drift and Urban Unemployment*

The rapid growth of the urban population mentioned above appears unprecedented. According to the overurbanization concept, the main cause for this growth has been attributed to the migratory movements. It was assumed that urban growth was by-and-large the result of rural migrants having been "pushed" into the urban regions, because of great and increasing population pressures in the rural regions. However, recently this belief has been seriously questioned by indicating, first, some "pulling" effects which cities exerted towards the countryside, and second, the finding of little or no pressure on land in the rural areas in the countries reputed to be overurbanized. In addition to this general criticism, empirical research showed that only one-half of the urban population expansion resulted from outside migration, the other half was accounted for simply by natural increase—a little more than 50 per cent in South East Asia and probably somewhat less in Africa. The thorough examination of the "pulling" effects showed that they were only partially based on availability of economic opportunities in the cities attracting more migrants. Many of them were provoked not by an increasing demand for labour in urban centres: but rather by consideration outside the sphere of resource allocation and use. Among them are the following: the attraction of the urban way of life, the existence of certain social restrictions in rural society, decolonization process, accompanied by excessive administrative expansion, existing links with urban families, and many others less important.

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[59] S. EL-Shakhs: "Development, Primacy and Systems of Cities", *Journal of Developing Areas*, October 1972, p. 16; Primacy is used here to imply the degree of concentration of urban population."

[60] Bairoch, *op. cit.*, 22. p.

[61] Urbanization, Sector Working Paper, World Bank, June 1972, p. 22.

[62] K. Mera, "On the Urban Agglomeration and Economic Efficiency", *Economic Development and Cultural Change*, January 1973.

On the whole, the studies on the causes of migration have shown so many "push-pull" aspects and such a variety in their composition that they make any generalizations hazardous. One thing seems to be clear enough: among the variety of factors, the higher levels of urban income constitute one of the most essential "pull" factors. Although according to the overurbanization hypothesis that migrants are either unemployed or in low productivity jobs, there is considerable evidence that the migrants are generally successful in getting jobs; unemployment among migrants of a few years' residence is generally noticeably lower than urban averages. Though productivity is very often low, it is found to be, in general, much more productive than their premigration employment.[63] The latter consideration constitutes the main argument for those advocating accelerated migration to the towns as the solution of rural poverty. The arguments run as follows: urbanization is expected to continue and to offer the most important opportunities for increasing employment, output and savings, and thus also the possibilities for increased future investment in both town and country. From this standpoint, the real problem is rural overpopulation, not urban overpopulation. In short, the dilemma is whether the imbalance of job supply and demand should be corrected through a development of employment opportunities in urban regions, which

[63] Although the urban unemployment situation appears generally to have worsened over the last 20 years (being defined now between 15 and 25 per cent), it is by no means clear whether it is worse than in the countryside.

obviously would involve an acceleration of the already very rapid pace of urbanization or the solution should be sought in rural areas. Either solution has very serious regional implications. Policy encouraging migration of rural labour to town would definitely lead to greater regional disparities in income levels and in levels of economic development in general. This policy is often opposed on the grounds that industry in cities could not absorb the surplus of the active rural population. Besides, the limited capacity of the manufacturing industry sector to absorb new-migrants makes the tertiary sector the main "reservoir" for their activity. The over-development of this sector seems to be detrimental to further development by reason of the pressure which the additional cost of distribution brings to bear on prices in the sectors of production, deteriorating the city economy as a whole. A preference for a reduction of income disparities, on the other hand, requires that much greater emphasis should be placed on creating jobs in rural areas by expansion of the productive opportunities in agriculture and by improving amenities in the countryside.

This dilemma between rural and urban priorities has led to increasing attention to the possibility of accelerating the development of small- and medium-sized towns Being an alternative to a strategy of directing population growth to old cities or back to the countryside, the idea has obvious attractions. Instead of constructing new towns where they do not exist, "the policy would put them where they show signs of wanting to be, other than in the largest cities".[64] Such an approach appears to combine several advantages: it might relieve population pressures both in the major cities and the countryside, provide for modernization to surrounding rural areas, create servicing and market centres in rural development, etc. However, important elements of this approach are usually presented in a very generalized form which reflects a great deal of confusion in the issue, which in turn reveals the inadequacy of the regional growth theory. Suffice is to say that even the criteria on which these centres should be selected is very contradictory.

Finally, and against this background, it is clear that urbanization problems have reached a magnitude and importance necessitating their explicit consideration in overall national and regional policies. It is no less clear that considerations of social equality and regional balance on the one hand, and more narrowly-defined considerations of economic efficiency on the other, must play an important role in the determination of urbanization policies at both national and regional levels.

## Regional Development (Country experience)

This section is intended to give illustrative examples of regional development patterns and policies in different countries. For further discussion "country cases" have been taken from three groups of developing countries which are conditionally called "advanced", "medium" and "least developed". The share of manufacturing output in GNP was taken as the basis for their distinction. Although arbitrary, this distinction gives, to our understanding, a rough idea of economic development in general and industrialization in particular. It is also in conformity with the assumption made earlier concerning the growing importance of regional socio-economic considerations in the course of development. Accepting the "level of development" as an underlying principle for grouping "case countries" and depending on the availability of information, due attention has been given to the following important considerations: size of the country; prevailing political and institutional system; geographical representation.

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[64] W. Alonso, "The Question of City Size and National Policy in Recent Developments in Regional Scenary", R. Funk, ed. 1972.

### A. "Advanced Group"

#### THE CASE OF MEXICO

*Main features and current problems in regional development.* In a country as large and as geographically varied as Mexico uneven levels of regional economic development and rates of progress are almost inevitable.

At various times since independence regional problems have played an important part in actions of the makers of economic policy. Historically, the Mexican concern for regional development found its expression in the generally emphasized idea that the agricultural regions away from the Mesa Central must be settled and developed. However, until recent times, due to certain technological limitations and geographical constraints on human settlements, very little—if any—success has been achieved.

With industrial development, an already obvious inadequate distribution of economic activity began to increase. Since industry was oriented towards the home market, it was not surprising that the majority of industrial establishments were to be found in the same Central Region. Let it suffice to say that in 1960 the Central Region of Mexico[65] accounted for 58 per cent of the total national population and 70 per cent of the value of industrial output.

The table below shows the changes that have taken place in the six most industrialized states over the last 40 years:

These figures are another proof of the earlier mentioned fact that the central market has always been the largest and has undergone a process

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[65] That is: Federal District, Guanajuato, Hidalgo, Mexico, Morelos, Puebla, Queretaro and Tlaxcala. The Federal District alone has increased its population by 44 per cent over the last ten years and is estimated to have 8.2 million inhabitants as of 1971.

## TABLE 1

### PERCENTAGE SHARE OF SIX TERRITORIAL UNITS IN THE INDUSTRIAL PRODUCTION OF MEXICO

| | 1930 | 1940 | 1960 | 1970 |
|---|---|---|---|---|
| Federal District | 27.7 | 26.6 | 39.7 | 43.0 |
| Mexico | 3.5 | 4.8 | 10.1 | 10.8 |
| Nuevo Leon | 7.7 | 6.5 | 9.2 | 11.5 |
| Veracruz | 10.0 | 12.7 | 6.8 | 7.2 |
| Coahuila | 5.6 | 5.3 | 4.3 | 4.8 |
| Jalisco | 3.7 | 3.9 | 4.3 | 4.9 |

*Source*: Annual Report of the UNDP for 1972.

of continual expansion so that its power of absorbing manufactured goods has grown at an extremely high rate. The density of population shown in Table 2 only illustrates the attractiveness of the Central Region:

## TABLE 2

### DENSITY OF POPULATION (BY REGIONS, 1960)

| | Population (thousand) | Area (sq. m.) | Population density |
|---|---|---|---|
| Central[66] | 12,561 | 49.8 | 252.2 |
| Gulf[67] | 3,224 | 37.6 | 85.7 |
| West | 4,459 | 56.2 | 79.3 |
| North Gulf | 2,103 | 55.7 | 37.8 |

*Source*: Industrial Census, 1961.

It can be seen that the Central area (and not only the capital!) has the densest population; the further one moves from the Central region, the more the density of population drops.

It has been calculated that the metropolitan area of Mexico City will have a population of between 12.5 million and 13.8 million inhabitants by 1980. In the same years it is estimated that at present trends the Federal District and the State of Mexico will account for over 60 per cent of total industrial production in the country.[68]

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[66] See footnote No. 1.

[67] The following breakdown is taken for regional variations: Gulf, Tabasco and Veracruz; West: Jolasco, Michoacan, Colima; North Gulf: Nuevo Leon and Tamaulipas.

Already now the value of industrial production in the metropolitan area of Mexico City is 1.2 times greater than in the remaining 99 industrial cities of the country despite the fact that they contain 1.8 times more population; moreover, this vast industrial centre has a volume of industrial output 5.4 times greater than the metropolitan area of the city of Monterrey, the second manufacturing centre in Mexico.

The following aggregate figures generally reflect the uneven rate of development between the Mexican regions.[70] "With about 16 per cent of the total population the Federal District accounts for 45.5 per cent of the total gross industrial product, followed by Monterrey with 7.1 per cent and Guadalajara with 2.9 per cent. It was estimated that 13 states, representing 35.5 per cent of total population were in the group of depressed zones; 11 states with 34.4 per cent of the population were in the group of intermediate zones; and eight states with 29.9 per cent of the population in the group of developed zones. Even in the last group the differences are enormous. Whereas the value added per capita in the Federal District was 9,500 pesos (1960), the immediate following regions only came up with 5,783. In the depressed zones the minimum was 1,694 pesos".

The same differences might be expressed by comparing the government-established minimum wages. In most developed areas this accounts for 53.85 pesos per day in urban areas, and 42.50 pesos per day in the rural areas, while these same rates in the poorest areas are 18.50 and 16 pesos respectively.

Per capita income (expressed as % of the national average = 100) differs from 261 in the Federal District, 313 in B. California Norte and 186 in Nuevo Leon on the one hand, to 49 in Guanajuato, 40 in Tabasco and 27 in Oaxaca on the other.

In summary, interregional disparities in levels of income and rates of progress are very marked in Mexico and have caused a good deal of concern. This concern has been concentrated in settling two main problems: (a) agricultural development of new land; (2) decentralization of industry. It has already been mentioned that Mesa Central was the chief agricultural region of the country, often called "the basic cereal zone". At the same time all the way through the period since the revolution the idea that the agricultural regions away from the Mesa Central must be settled and developed has been continually reiterated. The "march to the sea" to the fertile lands of the coast has been taken place in the direction of both the Pacific and the Gulf Coast, and has been the most important feature of Mexican agricultural development over the past half-century. In the 1950's the total value of agricultural output on the Mesa Central was surpassed by the value of output of the irrigated agricultural region of the north-west. The longsought goal of self-sufficiency in foodstuffs was virtually achieved in the late 1950's. Moving fast agricultural growth has been a significant component of total economic growth of the country. The bulk of Mexico's regional development efforts over an extended period of time have been directly connected with this process. However, the present 3.6 per cent annual demographic growth rate (causing a doubling of the number of inhabitants every twenty years!) requires keeping a constant focus on the problem of prospective colonization of new lands in regions other than Mesa Central.

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[68] The Economic Intelligence Unit, Quarterly Economic Review, Mexico, No. 1, 1972, p. 7.

[69] J. Ribo-Cebrian, Annual Report for 1971 for the Inter-Agency Consultative Board, April 1972.

The second problem of Mexican regional development is connected with the excessive concentration of people and industry in the historically advanced Central Plateau. This is particularly obvious in the Valley of Mexico (Federal District and surrounding areas).

Data on the internal migration of population shows a very marked movement into the Valley of Mexico and Mexico City particularly. A recent report claimed that over 350,000 people go to Mexico City each year looking for a job.[70] The influx of people and industry to the city impose costs on the people and firms already established in the area as well as increasing the demands on public services. Two types of costs are incurred with the growth of the city: costs that result from the need for more social overhead capital and costs due to the increased congestion and air pollution. Although the quantitative research on economies of scale in public services is far from adequate, it does suggest that the city is incurring substantial diseconomies in the provision of public services.[71] The most telling example of this is the problem of water supply in Mexico City and the Federal District. Assuming a decrease in the rate of growth of the population in the Valley so that the 1990 population would be only a little more than double its present size, it would be necessary to import about five times the water imported in the 1960's. The average cost of supplying water rises rapidly with the amount of water needed—from 20 centavos per cubic meter in 1960 to 60 centavos under the above assumption.[72] With average costs rising in this way, one can see how high the marginal cost must be. But this marginal cost is not paid by new firms, which cannot legally be charged more for their water than existing ones. This situation inevitably leads to the increase of per capita expenditure of the Government. For example, in the Federal District they are four times higher than in the next industrial cities such as Monterrey and Guadalajara (235 pesos and 50 pesos respectively). Physical congestion, shortage of

[70] *Ibid.*, p. 3.

[71] D. Barkin and T. King, *Regional Economic Development. The River Basin Approach in Mexico*, 1970, p. 68.

[72] José Orozco, *Problemas del Valle de México*, p. 113.

electricity and housing, air pollution contribute to the acute problems of the region. All these ever-increasing problems suggest urgent action towards decentralization of industry in the region.

*Regional development policy*. The most important efforts to stimulate regional development have been those directed towards the development of agriculture and communication networks. These efforts took the form of four river basin projects in which heavy hydro-electric and agricultural investment took place. Besides, specially designed planning machinery (River Basin Authorities) for co-ordination of public investment has been set up.

The first river basin Authority was established in 1947 in the River Papaloapan basin, covering some 47,000 square km on the Gulf of Mexico. The second was set up in the basin of Tepalcatepec; in 1951 it was merged into a larger Authority for the whole River Balsas region, with a total area of some 130,000 square km. At the same time, a new Authority was established for the River Grijalva basin—some 125,000 square km. These four regions—together formed some 17 per cent of the total land area of the Republic. A fifth region, the Lerma-Chapala-Santiago basin, the largest river basin in Mexico, was given a planning commission in 1950.

The main objective of the river basin development was twofold: purely economic and strongly political. The first category included questions about the overall size of the national income, the second was determined by the Government activity to see a more balanced level of regional development for its own sake. In the latter case regional development programmes were considered essential to minimize the danger of local disturbances caused by the people who may feel that they have been left out of the mainstream of economic progress.

Not being able to describe the effect of each project, we can summarize the changes they caused as follows: by increasing agricultural production, rural electrification and improved communication they have made a substantial contribution to national income and earnings of foreign exchange and have also effected the supply of some scarce and super-abundant factors of production. As a result Mexico has changed from being an importer of certain foods, particularly wheat, into a position where it frequently exports large quantities of wheat.

Thus, if the results are looked upon from the national point of view, they appear to be quite satisfactory and the first of the two objectives is met. However, it is clear that these developments did not have the desired impact on the regions themselves: "the benefits accrued to the nation as a whole (or to certain individuals), but the regional impact was limited."[73] The same applies to the goal of encouraging people and industry to locate outside the most populated areas. The Government has never provided special incentives so that new enterprises would locate in the river basins rather than somewhere else. The absence of any specific inducements to change traditional location patterns prevented firms from moving from large population centres. On the whole, although irrigation development had an impressive effect on local agricultural output the agricultural sector as such created very small forward and backward "linkage" effects and its at times successful growth did not lead to self-sustained regional economic development.

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[73] Barkin-King, *op. cit.*, p. 229.

Hence, Mexican experience proved the earlier arguments suggesting that the creation of an export base (agriculture in our case) is not always a sufficient condition for cumulative economic growth of the region; it is also true that the number of people benefitting directly from the projects has been very small in relation to the rest of the agricultural population, and, consequently, the second goal of river basin schemes implementation, namely a more equal distribution of the "fruits of development", has not been achieved. As Barkin puts it, "it seems clear that policy-makers have been willing to sacrifice very little in response to demands for a more equitable regional distribution of national income."[74]

Apart from the river basin projects very little was done until recently in the way of a regional development policy. According to King, "industrial growth remains . . . very largely concentrated in a few centres" where "social costs of expansion undoubtedly exceed private costs, but even private costs have reached high enough levels to encourage a growing number of firms to locate outside the Valley. However, very little has been done in the industrial sphere to try to alter matters."[75] Until very recently the establishment of a heavy industrial complex in Hidalgo, in an old and exhausted mining area with high unemployment, represented the only effort in this direction. It therefore seems to be clear that a more positive strategy than river basin schemes is needed to achieve the development of lagging regions. "Social overhead capital is only a permissive policy which will not necessarily bring development in its wake."[76] Only with the beginning of the 1970's has the Government been showing more interest in providing measures to encourage decentralization by using serious new incentives different from those provided under river basin schemes. The new decree (called New and Necessary Industries Law) launched in 1971 differs from its predecessor mainly in that the only way to benefit from it is to establish an industry in a non-industrialized area. Basically, the decree offers between 50 and 100 per cent exemptions from import duty and income tax, a programme of accelerated depreciation for machinery and equipment, and tax exemption on profits between 50 and 100 per cent.

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[74] Barkin-King, *op. cit.*, p. 247.

[75] T. King, *Mexico: Industrialization and Trade Policies*, 1970, p. 108.

[76] Barkin-King, *op. cit.*, p. 248.

For purposes of this decree Mexico is divided into three zones—industrial, industrializing and the rest—and cheap credit will be offered for the two less industrialized zones.

Another new move towards decentralization found its reflection in a promotional programme granting assistance to investors to establish industrial units within a 20 km long strip, parallel to the international border line or to the coast line.[77] Firms are entitled to import raw materials free of duty, provided that the entire production is reexported. The reason behind this regulation was the high degree of absorption of the local residents by the American economy. Substantial net immigration caused a continual employment problem and the whole situation was embarrassing to the Mexican authorities. A new programme gives a visible stimulus to establishing both national and joint ventures in the border areas. Wage differences between the United States and the Mexian border towns are sufficient to make it attractive to American firms. However, these programmes are in the very initial stage of implementation and that makes any serious assessment premature.

## THE CASE OF INDIA

*The present pattern of regional development* At the time of gaining independence the Indian regional development pattern was characterized by marked differences in levels of development between a few industrially advanced areas and the rest of the country. This was one of the obvious reflections of the inequitable international division of labour between a metropolitan country and its colony; the main feature of this was a general dependence on and subordination of the Indian economy to the needs of the metropolis. Manufacturing industries and other economic activities were concentrated in and around large cities while the rest of the economy remained predominantly agricultural and rural. Most of these cities came into being even before industrialization, starting around markets, religious and administrative centres. In the colonial period the collecting, processing and transportation of export goods gave impetus to the formation of cities in the neighbourhood or around desirable ports for overseas shipment (Calcutta, Bombay, Madras). These ports and industrial-administrative centres stimulated the economic development of their surroundings and adjoining areas. Later on their growth and the pattern of new city formation was determined by the rate and form of industrial development. Nowadays, these historically developed centres form the core of most industrially advanced areas in India. In the northeast it is the Calcutta-Damodar industrial zone composing a number of industrial cities lying to the north and west of Calcutta. In the west of India the industrial zone stretches from the port of Bombay to Ahmedabad and in the south it is the Madras-Bangalore region.[78]

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[77] See, Mexican Border Industrialization Programme, Secretaria de industria y comercio Mexico, 1971.

Since independence India has witnessed the process of accelerated industrial development. This has led to the further upbuilding of the old developed areas of the country and concentration of industries in the big cities which in turn has increased the disparities between them and the rest of the country. In 1961, 40 per cent of the workers in large-scale factory establishments were concentrated in the metropolitan areas of seven cities, Calcutta, Bombay, Delhi, Madras, Hyderabad, Bangalore and Ahmedabad, each of which had a population of a million or more. Metropolitan Calcutta and Greater Bombay with only 2.3 per cent of the population of the country had nearly 30 per cent of the factory workers. An analysis of location of industrial units in private sector during the period of the first three Plans shows that 64.4 per cent of the units have been located in and around the cities, and as much as 41.4 per cent have been located in cities with a population of a million or more. Nearly two-thirds of all units were in the four groups of industries—metals, machinery and equipment, transport equipment and chemical products. It is noteworthy that preference for location in large cities is particularly marked in these cases; 75 per cent of the units in these industries are located in the cities and 53 per cent are located in the "million cities". In the case of the machinery and equipment group and chemicals and allied products 40 per cent of the units in each group have been located in metropolitan Calcutta and Greater Bombay alone.[79]

Alongside the continued concentration of industries within the private sector 72.6 per cent of industrial investment in the public sector (in the first three plans) was in industrial units having small town or greenfield locations. But this group consisted of a few very large units, mainly the steel plants and petroleum-based industries. From the above discussion it becomes clear that two opposite or controversial processes are present in current economic development in the country: one is a continued concentration of economic activity and the opposite is a planned distribution of the public enterprises. The first tendency demonstrates the strength of the concentrating forces, the second is a result of a deliberate Government policy towards industrial dispersal and gradual changing of the spacial structure of the economy.

Before looking at the concrete forms in which these two tendencies reveal themselves, it seems useful to consider the main principles of Indian regional development policy.

*Regional development policy* The Government of India has favoured the policies of industrial dispersal from the beginning of planned development. These were stated as important objectives of the industrial policy in the Second Industrial Policy Resolution in 1956 and have been reiterated in the Fourth Five Year Plan (1969–1974): "Balanced regional development and dispersal of economic activity are closely interrelated", "... important consideration in industrial planning is the desirability of dispersed industrial development".[80] India was among the first newly independent countries faced with the dilemma which might be formulated as a problem of economic efficiency versus social and regional equity, which in turn is often discussed and expressed in terms of agglomeration versus decentralization, regional balance and income distribution, industrialization and urbanization, etc. The answer to these questions which is still far from perfection both in theory and practice in either developed or developing economies has been found in India only by converging two separate types of economic policy to serve essentially two distinct social and economic purposes. The first consisted of capital intensive, large-scale industries with emphasis on the production of intermediate and capital goods and the second represented labour intensive, small-scale consumer goods industries. The first group was to serve the objectives of economic growth, the second, the objective of increasing current employment and hence, improvement of income distribution. Accordingly, Indian planners also applied different location criteria to the two groups of industries. The location decisions in the first group were based on considerations whose primary concern was the efficiency of resource use in the heavy industrial complex. The second group of industries, on the other hand, was offered for the satisfaction of regional balance requirements. This dualism in development policy was only in part based on purely economic or technical considerations. "In this case of India the objective of balanced regional growth was declared without any adequate analysis of the problem . . . " points out Datta-Choudhuri.[81] To a larger extent this dualism was caused by the increasing concern with the potential consequences of uncontrolled metropolitan growth and in part because of the political-economic problems caused by regional inequalities in the standard of living and subsequent necessity of social changes all over the country. It must also be recognized that the Gandhian preference for local self-sufficiency, traditional communalism, greater value historically attributed to ethical or human aspects of economic development were behind this process and greatly influenced the formulation of present development strategy.[82] In fact, a combination of the above historical and modern factors made the policy of balanced development and industrial dispersal a political must for the country.

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[78] For more details see, G. Sdasyuk, "Some Aspects of the Formation of Economic Regions in the Developing Countries (A Case Study of India), in, *Problems of Economic Regionalization in the Developing Countries*, Moscow, 1968.

[79] Town and Country Planning Organization, New Delhi, Background Paper, p. 19 (unpublished).

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[80] Fourth Five Year Plan 1969–74, Government of India, Planning Commission, pp. 18 and 303.

[81] *Regional Development: Experience and Prospects*, South and Southeast Asia, Part 2, Geneva, UNRISD, p. 198.

[82] For more details on the combination of traditional and modern forces in Indian economic policy see V. Rao, *Values and Economic Development*, London, 1971.

*Institutional aspects of regionāl planning* The Indian Union is a federation of autonomous states. The Constitution of the country prescribes respective spheres in which the central and state Governments are assumed to exercise exclusive authority. Although the co-ordination of state and national planning represents the most important aspect of the regional planning problem in India, planning machinary has been set up at the level lower than state. The principal administrative unit below the state level is the district. Districts are divided into smaller administrative units—community development blocks (since 1952). The smallest unit for planning and execution of development programmes is the village. Very small villages are grouped together into one panchayat (village council). The principal division of responsibilities between different planning institutions is as follows: the Central Government has the responsibility for overall economic and social policies and for planning in transport and communications, basic industries and some other sectors. The state governments have the primary responsibility for agriculture and other aspects of rural development, irrigation, power, education, health, housing, urban development, etc. Even though major industries, transport and communications are the responsibility primarily of the central Government, the state governments have considerable influence in decision-making in respect of individual projects. Despite the frequent and natural conflicting situations between Centre and State at the time of five year plan formulation until now no formal machinery had been established for their resolution. A reasonable explanation for this was made by Datta-Chaudhuri: "Until recently and with minor exceptions the Congress Party controlled the Government at the Centre and in all States . . . It could afford to make the process of formulating both Central and States plans a co-operative and almost informal venture."[83] During the last four years in the changed political circumstances of the country informal and co-operative planning methods become ineffective.[84] It was recognized as admitted by the Planning Commision that "the whole approach of directing the development effort in the States through Centrally assisted 'approved' schemes has been given up". As a result the old system of Central-State relations is undergoing drastic change with the clear intention of giving greater autonomy for the States. The present move togards greater decentralization in the planning process also considerably effected the lower levels of planning. A new scheme considers districts a principal unit for the formulation of a comprehensiae area development. The district is chosen as a regional planning area largely because the present data collection system does not go below this level. According to the planning Commission, district plans are two-fold: (1) the first objective is to set forth a long-term perspective over the next 15–20 years and (2) the second one is to prepare and integrate a programme of action for the next five-year plan.

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[83] M. Datta-Chaudhuri, "Regional Planning in India", in: *Issues in Regional Planning*, Paris, 1971.

[84] The Congress Party has lost control of more than half of the State Governments.

In other words, the district's field of activity, earlier confined to agriculture, community development and rural infra-structure has been considerably enlarged.

The above discussion has shown that regional planning in India has been executed mostly for regions defined in terms of political and administrative boundaries. At the same time, ad hoc regional development organizations have sometimes been set-up in the past to prepare development programmes for geographical areas which covered territories belonging to different States.

*Instruments of regional development policy*

1. *Industrial estate programme* This programme, based largely on the regional dispersal principle, has been designed with a two-fold objective: first, as a corrective policy measure to prevent or slow down the tendency towards the agglomeration of urban activities in the existing big cities, and second, to promote small-scale industries. From the very outset of its planning effort, the development of small-scale industries had a special place in India's economic strategy. As early as 1948 the Industrial Policy Resolution stated: "Cottage and small-scale industries have a very important role in the national economy . . . These industries are particularly suited for the better utilization of local resources and the achievement of local self-sufficiency."[85]

The programme was started before the end of the first five year plan (the first estate was established in 1956) and by the end of the fourth plan the number of estates reached 505. A total of 2,100 factory sheds of various sizes were built by the end of the second plan, and this rose to 6,000 by 1972.[86] The two phases of government policy can be distinguished during this period. At the earlier stage estates were established in urban areas in or around cities. The emphasis was placed on the promotion of small industries. In achieving this particular objective the policy was fairly successful. However, many of these small industries clustered at the outskirts of large cities, thereby, unwittingly aggravating an already excessive urban polarization. This fact unveiled the diverse if not conflicting character of the twin objectives the estates programme was supposed to meet. By 1959 when the planners "had developed guilt feelings about the way the programme was compounding metropolitan-centened industrial location"[87] the Ministry of Industries initiated a new policy for promoting industrialization in rural and semi-urban areas. According to this new policy estates should be established in places with less than 2,500 persons. But this programme has shown disappointing results, i.e. low occupancy rates because of a lack of response on the part of prospeetive entrepreneurs. Although data for the performance of the programme in India are insufficient, some conclusions are obvious. In general, disappointing results in promoting estates in rural areas were due to the fact that "policy planners failed to understand adequately the economic forces governing location of industries."[88] Among those forces are uncertainties about transport and communication, lack of skilled personal, and last but not least, lack of special incentives to induce skilled entrepreneurs to go to the backward regions from the more developed regions. At the same time rural and semiurban areas where estates were located simply could not be able to supply manpower needed for industrial enterprises and were utterly incapable of providing transport, repair and credit facilities which a prospective group of small shops would require.

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[85] K. Bandyopadhyaya, *Industrialization through Industrial Estates* (*A Pattern of Economic Decentralization*), Calcutta, 1969.

[86] *Criteria of Industrial Zoning*, Vienna, 1973, International Institute for Industrial Planning, p. 24.

2. *City planning* Urban development and city planning were accorded particular recognition in Indian development plans. This ever increasing pre-occupation with urbanization problems was due to the striking rate of change in the degree of urbanization in recent decades. For example, in 1921 India was 11.4 per cent "urban", in 1941, 13.9 per cent, 17.3 per cent in 1951, 18 per cent in 1961 and according to present projects by 1981 urban population will be 25.3 per cent (nearly 152 million). "There is an urgent need . . . to prevent unregular growth of the towns" stresses Indian official planning document. "The situation in regard to growth of population in metropolitan centres, particularly of Calcutta and Bombay, is already so difficult as to make it almost a law and order problem."[89]

Until recently it was believed that the present rate of urban growth was quite inevitable and a natural result of industrial development in the context of modern technology. However, as shown by G. Myrdal and A. Mitra, in many developing countries of Southeast Asia, including India, it was not always the case; urbanization might continue even without the pull of industrial development or it can run far ahead of the other aspects of development.[90]

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[87] J. Lewis, *Quiet Crisis in India*, Washington, 1962, p. 186.

[88] Datta-Chaudhuri, *op. cit.*, p. 178.

[89] Regional and Urban Development, Fourth Five Year Plan, p. 398.

[90] G. Myrdal, *Asian Drama*, New York, 1968; A. Mitra, *A Functional Classification of India's Town* (mimeo.) Myrdal gives the following explanation to this phenomena, Labour migration from countryside to town and further to larger metropolises begins when land-man ratio becomes unfavourable not because there is any assurance of employment but because of the push of circumstances. Thus, Myrdal summarizes, "instead of standing as a symptom of growth as . . . in the West, urbanization is an aspect of continued poverty."

The Indian case gives evidence that decentralized urban industrial growth would require very strong intervention in terms of "package" positive incentives for entrepreneurs to go away from over-congested areas in combination with some restrictive measures. "In cities like Calcutta and Bombay it may be necessary to think not only at preventing further growth of population but also of decongestion or dispersal of population."[91] To this effect some legislative and administrative measures have been undertaken. During the period 1963–69 development plans for 40 cities were computed. In certain cities such as Calcutta and Bombay metropolitan planning organizations were created to prepare comprehensive master plans for land use in the cities. By 1969–70 almost all states had introduced Town Planning Legislation with varying scope.

3. *Direct industrial investment in big projects* The largest part of investment made by the public sector in the first four plans (73 per cent) was in industrial units having small-town or green-field locations. All direct industrial investment made by the Government was undertaken on the basis of efficiency. The size and complexity of these projects (mainly steel mills) were such that, as rightly noted, "those sources of supply (including urban and social overhead services) which are external to most other enterprises were internal to them".[92] Their creation generated a growth process in the respective regions resulting in the construction of planned urban complexes around the new plants. Furthermore, the public sector created the necessary social and institutional infrastructure, which in turn had a great influence on the economic growth of the regions and on the eventual success of the projects as a whole.

4. *Area development.* Although at present this term is used for formulating comprehensive development plans at the district level, for many years in the past it was used for defining specific tasks facing the so-called "undeveloped" geographical areas in the country. The main distinction between them and underdeveloped areas in India (dealt with in previous chapters) is that the programmes of their development call for a scheme of settling new migrants in addition to the importation of capital and skills which is common with the underdeveloped areas. The most outstanding example of such a instrument in Indian regional policy was the Dandakaranya Development Programme set up in 1957 to develop a very thinly populated hill areas in Central India for the specific purpose of settling refugees from East Pakistan.

## B. "Medium group"

### THE CASE OF IRAN

*Regional inequalities* The size of the country (1,648,000 sq. km) and its diversity both in terms of natural resources and potential and in terms of ethnic composition as well as disparities in living standards make regional problems in Iran particularly acute. From the view of physical features and climate there are at least four large regions: the shores of the Persian Gulf, Elbuzz and Zagros mountain ranges, high plateau and the shores of the Caspian Sea.

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[91] Fourth Five Year Plan, p. 388.

[92] Regional Development in South and Southeast Asia, *op. cit.*, p. 203.

Regional differences have been accentuated rather than reduced by recent economic growth. During the Third Plan the economic growth rate in Iran was roughly 6 per cent per year, 9.5 per cent during the Fourth Plan (1969–1973) and 11 per cent annual increase has been set up as a goal for the Fifth Plan commenced in March 1973. Iran's gross national product being advanced annually by more than 10 per cent thereby maintains a rate of growth second only to Japan.

This trend has not been accompanied by a balanced and co-ordinated distribution of income. "Income distribution remains very unequal with millions in villages remaining nearly as poor as they have always been."[93] It is now clear that the high proportion of industrial activities is concentrated in the Central Ostan region (with the capital as its "core") while some other regions (Sistan-Baluchestan and Kermakshah) have hardly been effected by the recent marked growth. Another very significant feature of the present locational pattern of the national economy is the concentration of the oil industry in the southwestern extremity of the country (Khuzestan and Khukiliuyeh) a fact which makes a definite contribution to the relative prosperity of these remote regions.

The fact of centralization of industry finds its reflection in the rural-urban ratio for different regions. According to the latest (1966) population census the population density varies widely from one region to another—from 56.0 inhabitants per sq. km in the central provinces (Teheran region) to 2.5 inhabitants per sq. km in Sistan-Balutchestan. This is equally true of the degree of urbanization, which is 38.4 on the average, but ranges from 70.5 in the central province to 8.3 in Kohkiluch. In other words some regions are highly urbanized and others hardly at all. The outstanding position in this sense belongs to Tehran. Although the Iranian capital houses no more than 11 per cent of the total population and only 5 per cent of industrial plants (excluding the oil industry),[94] half of total value added by industry in the country is produced in this city. Per capita income in Teheran is 45 per cent higher than in other large provincial cities and 70 per cent higher than in small towns. No other region even remotely compares to Teheran region in either of these respects. Over the last ten years Teheran has had a population growth rate of 6 per cent per year and rural migration has accounted for three per cent of this.

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[93] Annual Report of the UNDP Resident Representative for 1970, p. 4.

[94] Here and in some of the further calculations the analysis often refers either to the "with oil" or "without oil" exports, particularly for the Teheran area and Khuzestan region.

The differences among regions both in terms of their value added contribution to the economy as a whole (shown at factor cost) and its per capita distribution in various regions are shown in Table 3.

### TABLE 3

### GROSS REGIONAL PRODUCTION AND ITS PER CAPITA DISTRIBUTION PRIVATE REGIONAL CONSUMPTION—1972

| Region | Gross regional production (billions of Rials) | Per cent of total Iran | Gross regional production per capita (1000 Rials per year) | Private consumption per capita |
|---|---|---|---|---|
| Gilan, Mazanderan, Gorgan | 71.78 | 6.8 | 19.5 | 17.3 |
| Azerbayejan | 62.83 | 6.0 | 14.2 | 12.3 |
| Teheran, Semnan Zanjan | 355.11 | 34.0 | 59.4 | 40.6 |
| Khuzestan, Khukilluyeh (1) | 311.89 | 29.7 | — | — |
| Khuzestan, Khukilluyeh (2) | 63.94 | 6.1 | 28.2 | 21.8 |
| Hamedan, Lorestan | 31.25 | 3.0 | 14.4 | 11.5 |
| Esfahan, Yazd | 69.38 | 6.6 | 25.5 | 20.1 |
| Fars | 40.24 | 3.8 | 20.4 | 17.1 |
| Sistan, Baluchestan, Kerman | 21.27 | 2.0 | 12.4 | 9.8 |
| Khorassan | 50.11 | 4.8 | 15.2 | 13.6 |
| Kermanshahan, Kordestan, Elam | 28.28 | 2.7 | 12.9 | 10.8 |
| Bandar-Abbas, Bushehr | 6.49 | 0.6 | 9.3 | 6.8 |
| Total (1) | 1048.70 | 100.0 | — | — |
| Total (2) | 800.75 | 100.0 | 25.7 | 19.7 |

Notes: (1) Including oil exports.
(2) Excluding oil exports.

*Source*: Battelle Research Institute, Report on Iran 1972 (unpublished).

Table 3 shows that there are four clear groupings of regions according to per capita expenditures and per capita production. The first group is formed by Teheran and its surroundings with per capita annual private consumption of 40,600 Rials and per capita production at 59,400 Rials. The second group is formed by the relatively prosperous regions: three

Caspian regions, Khuzestan, Esfahan and Fars with per capita annual private consumption between 17,100 and 21,800 Rials and per capita production ranging from 19,500 to 28,200 Rials. The third group is formed by the intermediate regions: Azerbayejan, Hamedan-Lorestan and Khorassan (per capita consumption between 11,500 and 13,600 Rials and per capita production 14,300–15,200). The lagging regions form the fourth group, Sistan, Baluchestan, Kerman, Kermanshahan, Kordestan, Elam and Bandar-Abbas and Bushehr, with the respective figures 6,800–10,800 Rials for per capita consumption and 9,300–12,900 Rials per capita production.

In addition, data computed from the UN Yearbook of National Accounts Statistics, 1969, indicate very sharp extremes in incomes between the top and lower decile shares. While the upper decile's share is 67 per cent, the lower decile's share of total consumption is only eight per cent. There are several indications that Iranian planners are aware that this extreme dualism in income distribution pattern might in the long run become an obstacle to the high growth rate experienced by the country within the last decade. These considerations were behind some of the recent attempts undertaken towards more fair distribution of personal incomes reflected in a new five year plan.

*Former attempts to reduce inequalities.* Ever since it was established the Plan Organization had endeavoured to carry out regional schemes in order to achieve a more balanced development of the country. These schemes have tended to consist or more or less isolated projects, e.g., investment in irrigation for agriculture (Moghan plain development programme) or the establishment of industries in certain provincial capitals. Among the first known projects were the so-called Baluchestan development plan to be carried out in the southeast and Khuzistan in the southwest. "In general the concept of regional development in Iran has, in the first instance, taken the form of intensive investment in regions with natural resources capable of attaining maximum economic output . . . ."[95] It was not until the Fourth Plan that the Plan Organization tried to establish several industrial poles in the cities of Esfahan, Tabris and Arak. A first attempt has also been made to define the principles of genuine regional planning, but the Organization was not wholly successful in putting them into practice. The relative lack of success was due to two main factors: the lack of administrative machinery necessary for plan execution and the deficiency of development methods and insufficient incentives for the private sector. In our opinion the chief weakness of the whole effort was insufficient planning machinery and the attempt to manage all projects from Teheran, which resulted in overcentralization of economic, political and administrative activities. Despite the fact that in several of the above mentioned cases formally autonomous organizations were set up, their operational weakness and general dependence on Teheran was detrimental to the whole project. Suffice it to say that the role of provincial banks (which have multiplied in the last fifteen years) was limited to the function of attracting savings, not making loans. As a result of existing administrative centralization and despite considerable technical and finiancial support from the Government, attempts to initiate a self-development process in the regions have not been successful. Another point in connexion with the implementation of regional projects was the limited participation of local communities in them. The reason for this can be found in recent Iranian history. Before agrarian reform, the administration was linked with the regime of large estates through which it exerted its administrative functions. However, later, the abolition of the feudal system which had led to a redistribution of land and created a better social climate, failed to create a new industrial set up between Centre and local communes.

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[95] The Fourth Economic Plan of Iran, p. 83.

At the time of the first experimental regional projects the village people were outside any administrative system. The notion behind Iranian policies to establish industrial centres was that if new locations could be found, industrial activity would have a stimulating effect on the surrounding area. Iranian experience shows that every industrial centre is not necessarily a pole of development. The Abadan refinery is perhaps the most significant example. It was set up several decade ago, but has brought very little other industry into the surrounding region. Besides the poor response from local people mentioned above, the desired transformation of established plants or factories into development poles suffered very much from lack of response on the part of the private sector. Incentives granted by the Government, seeming at first glance very considerable, were not sufficient to offset the disadvantages of distant locations. To sum up the results of the first attempts to either create new development poles or to centralize industrial congestion were not particularly encouraging. Aware of this fact, Plan Organization officials proposed even before the end of the Fourth Plan that the Fifth Plan should include a comprehensive development programme for each region, and regional planning machinery should be completely reorganized.

*A new approach* In the course of the preparation of the Fifth Plan the Iranian Government has made a marked shift towards the policy of promoting the establishment of industry in the provinces. To this end the regional planning machinery has been reorganized and sectoral programmes formulated with a much stronger regional focus. The country has been divided into 11 planning regions in accordance with the following criteria: (1) degree of economic development; (2) type of economic activity; (3) ethnic composition; (4) potentialities; (5) existence of a growth point. At the national level the regionalization of the Plan is the exclusive prerogative of the Regional Development Division of Plan Organization.

Regional Development Authorities, which are under the direction of the Plan Organization have been established in each region. An advisory council headed by the governor with ministry representatives is attached to each Regional Authority. The Authority has its own budget with which to implement the regional plan. The following framework has been established for the 11 regional plans: (1) regional strategies and objectives in keeping with national strategies and objectives; (2) identification of present and future bottlenecks; (3) investment priorities; (4) recommendations on development policies and budgetary procedures. All 11 plans constitute an integral part or form a regional dimension of the national plan. They include both public sector projects and the identification of private sector opportunities and policies to encourage the exploitation of these opportunities. The suggested implementation machinery is considered to be of crucial importance in meeting regional problems on the one hand and achieving the main tasks of the Fifth Plan in lessening the country's inequalities on the other.[96] The attempt to introduce new methods aimed at more effective implementation of the national development plan was described by the Shah as "an administrative revolution" in the Fifth Plan.

The size of the regional development programme in each region differs significantly depending on local conditions and targets set up before the region. Accordingly, a set of specific policies has been formulated for each of the regions. Projections for the period 1973–77 show that the Teheran region will no longer grow at the fastest rate. The projected increase in regional production (70 per cent) will be surpassed by Fsfahan and Khuzestan regions and equalled by the growth of Fars (136, 104 and 70 per cent respectively). The rate of growth of these regions is above the national average. However, in general, the growth rates of the regions which have already benefited from industrialization are among the highest projected by the regional plans for the coming five year period (the rate of growth ranges from 136 to 70 per cent) compared with 43–60 per cent for traditional agricultural regions.

The development policies for particularly the most potential regions are being reconsidered with the aim of increasing their effectiveness. A certain emphasis on positive measures as opposed to the restrictive measures of the past years is obvious. For example, for industries in the Esfahan area 50 per cent of their profits are exempt from taxes according to a new policy of attracting new industries into the region. In certain frontier areas the length of exemption is extended to ten and more years. At the same time the private sector will be encouraged to expand its industrial holdings in the regions in a "closer fashion" with the Government's plans for regional industrial development. The Ministry of Economy has served notice on the private sector that it will sanction only projects that are complimentary to state schemes and will provide protection against imported competitive goods only where developments contribute to the specific aims of the industrial plan.[97]

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[96] The degree of proposed change becomes more obvious if one remembers that until recently each ministry made an allocation to its regional branches out of its own operating budget and only a very small part of investment was broken down geographically. Other than the taxes levied by local authorities, the regions had no revenue of their own.

Summing up one can say that although it is still too soon to form a definite opinion about the possible practical results of this new approach; it marks in itself a definite step forward in the process of regional planning in Iran. As it was rightly noted, without this necessary step towards co-ordination of regional and national efforts "scientific projections of the past are likely to be regarded as jokes in rather poor taste".[98]

## THE CASE OF GHANA

*Regional disparities and planning efforts* The present state of the national economy is characterized by the two types of imbalance: structural and regional. To a great extent both have been inherited by the country from the colonial system under which the country was ruled for over a hundred years until independence was achieved in 1957. "It was in the interest of the metropolitan power to encourage the production of unprocessed commodities which she imported to feed her factories . . . . Owing to the necessity of being near the ports the majority of industries were concentrated in the Accra/Tema and Sekoudi/Takorodi areas at the expense of the countryside".[99]

Ghana is divided into nine administrative regions which are also her planning units.[100] Greater Accra with one per cent of the total area of the country houses 7.3 per cent of the population, while the northern region with 30 per cent of the total area commands eight per cent. The statistics on gross value added originated by different regions given in Table 4 further illustrate the disparities. The table shows a distinct concentration of Ghana's economic activity in Accra and also in the Eastern, Ashanti and Western regions. Together these four regions yield almost three-quarters of the value added of the economy although their area and population are 34 and 61 per cent respectively of the national totals. No less concentrated than the human resources is the man-made capital. Ashanti, East, West and Accra account for 82 per cent of the capital stock of Ghana. Almost half the value of construction in Ghana can be credited to Greater Accra. Its share in general equipment is about 44 per cent.

The problem of imbalances in regional development has been recognized in Ghana some time ago. It was observed at the time of launching the seven year plan in 1963: "The development of Ghana has hitherto not been sufficiently balanced between different parts of the country. It is the deliberate policy of this plan to correct this imbalance."[101] However, these goals were never achieved due to the deficient process of plan formulation and the ineffective implementation mechinery. Plan targets were formulated essentially at the centre without any regional breakdowns. Although a Planning Commission and the sectoral committees formed to help it tried to introduce some co-ordination into the process of plan preparation, they were using data supplied by the central ministries. "There was very little participation of the regional population, and yet the population as a whole was expected to implement the plan."[102] In fact, the "regional dimension" of the first development plan was very limited. Besides, its reference to the need for a balanced development and several regional resource appraisals made in the course of its formulation, there were no targets for the regions to say nothing of a conscious regional policy.

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[97] *The EIU Quarterly Economic Review, Iran*, New York, 1972, p. 12.

[98] E. Naraghi, *Regional Studies in Iran*, Teheran University (mimeo.).

[99] *Ghana Economic Review*, 1970, p. 15–18.

[100] They are: Greater Accra, Western. Central, Eastern, Volta, Ashanti, Brong Ahafo, Northern, Upper.

Again the prohlem was highlighted in 1966: the Two-year (Stabilization) Plan noted: " . . . /Ghana/ should seek to achieve a more equitable distribution of income between regions . . . ".[103] This time the Government of Ghana decided (in late 1967) that in addition to the sectoral programming units in the ministries, regional planning committees should be established in all the nine administrative regions. This new move of the Government reflected the view that "a good plan originates at the grass roots where it should be prepared by new committees". Greater emphasis was given to agriculture and to the establishment of closer links between industrial and agricultural development. While establishing the membership of the committees, provision was made for the inclusion of "public spirited people" in the regions who were "desirous of seeing the region develop at a more rapid rate of growth". The new approach aimed at providing maximum possible participation of the local people in the grass root plan formulation. As Prof. J. Bognár observed, "The confidence of the population of the region in the local organs is enhanced if genuinely local forces are represented in it. Such an approach will be more able not only to carry out the intentions of the government but also to explain and have them adopted by persuasion."[104]

The specific functions of the regional planning committees included: collection of data on all local resources, submission of proposals on their utilization, co-ordinating regional development activities, etc. The main weakness in the proposed system was that the responsibility for regional plan preparation did not rest with the committees but as before, with the various ministries. Regional committees receive copies of the estimates of expenditure prepared by the ministries in Accra, and their recommendations are very often rejected by ministries. Under the existing system, regional planning committees are not shown even the limits of their resources. The basic miscalculation is that the regional system of planning has been rather "mechanically" imposed on an earlier prevailing system of severe sectoral (or "ministerie ') planning without the necessary delegation of decision power to a new system. As a result, in their present role regional committees are best described as a discussion forum, "information bureau and project inspectorates".

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[101] Ghana Government, Office of the Planning Commission, Seven-year Development Plan, p. XIV.

[102] J. E. Bannerman, *Regional Planning in Ghana*, 1972, p. 133.

[103] Ghana Government, Ministry of Economic Affairs, Two-year Development Plan, p. 2.

[104] J. Bognár, *Economic Policy and Planning in Developing Countries*, Budapest, 1969, p. 469.

*The Volta Basin development* The Volta River Authority was established in 1961. It is responsible for administering the Volta River Project, which is a many-sided economic scheme. Apart from the main project of power production, it has several auxiliary functions. These include the resettlement of persons displaced by the formation of the Volta Lake, irrigation agriculture on the Accra plains, Volta Lake transportation, fishing, etc. The development that has taken place since 1956 is that a dam 90 meters high was constructed for the generation of 512 MW; a new harbour was built in Tema as well as a smelter for the production of 135,000 tons of aluminium and the extension of Volta power from Akosombo to cover the whole of the southern parts of Ghana.

However, in addition to the purely engineering achievements of the Volta project, the resettlement of 80,000 people (living in 739 villages) presented the planners with the unique opportunity to introduce regional planning techniques in the location of new towns and villages and the planning of modern forms of agriculture. industry and transportation. The Volta River Project was a good case in attempting to devise a strategy that will favour balanced development keeping in mind the interdependence of rural and urban problems.[105] The problem was finally resolved by a decision to create for the displaced people a "network of rural towns or townships ... connected with one another and with the rest of the country."

Seven planning areas were proposed in the Volta Basin, and each

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[105] It is worthwhile mentioning that with the Second Development Decade has come a more acute realization of the relationship between the rural and urban sectors and of the fact that balanced development can not be achieved without an integrated approach which considers the problems and needs of the two sectors together. The establishment of agro-industrial growth centres is one of the proposed tools for settling this problem and is of direct relevance to the final outcome of the project under consideration. For details see *Promotion and Balanced Development in Rural and Urban Areas*, Geneva, 1971, ILO.

## TABLE 4

## REGIONAL GROSS VALUE ADDED BY SECTORS (1960)

| Region | Agriculture | Forestry | Cocoa | Mining | Manu-facturing | Electricity and fuel | Construc-tion | Public utilities | Services | Public Consumption | All |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Accra | 1.3 | 0.1 | — | — | 3.9 | 1.8 | 22.5 | 1.6 | 58.7 | 9.9 | 100.00 |
| Western + Central | 12.3 | 8.6 | 9.8 | 11.4 | 2.6 | 1.4 | 7.0 | 5.5 | 36.9 | 4.6 | |
| Eastern | 24.9 | 4.3 | 13.7 | 14.6 | 0.7 | 0.5 | 5.9 | 0.5 | 31.1 | 3.7 | |
| Volta | 42.7 | 3.3 | 9.9 | — | — | 0.3 | 6.3 | 0.3 | 31.9 | 5.4 | |
| Ashanti | 17.2 | 5.2 | 21.1 | 4.5 | 2.5 | 0.9 | 7.4 | 0.8 | 35.6 | 4.7 | |
| Brong Ahafo | 34.6 | 8.7 | 26.7 | — | 0.3 | 0.3 | 4.2 | — | 22.2 | 3.1 | |
| Northern + Upper | 54.9 | 4.4 | — | — | 0.3 | 0.5 | 10.1 | 0.5 | 22.9 | 6.4 | |
| All regions | 20.8 | 4.8 | 10.9 | 5.3 | 2.0 | 1.1 | 10.1 | 1.9 | 37.4 | 5.7 | |

*Source*: *A Study of Contemporary Ghana*, Vol. 1, London, 1966, p. 93.

planning area was to have three types of settlements, namely, a "central town", a "service centre", "satellite village" and below these, village clusters. The "centre town" with a population of 10,000 was to play the functions of industry trade, service and government centre of each of the seven planning areas. Each "central town" was located where there existed the best combination of water supplies, accessible minerals and agricultural materials. A transport factor was given most careful consideration since it was assumed that the new spatial pattern would make agriculture much more commercialized than the old near subsistence type. The "service centres" which have an average population of 8,000 and not less than 5,000 were to be the local centre of trade, education and postal services. Each "satellite village" would serve a radius of 12–15 km of smaller settlements and perform service functions for the surrounding agricultural industries. On the basis of these regional locations, 52 resettlement towns and villages have been completed across the Volta Basin. Although the physical location of people has been completed, the lack of financing has caused a considerable delay in implementing industrial and agricultural programmes which constituted an integral part of the whole project. It still remains to be seen how successful this rather drastic restructuring of the living and working patterns of the people will be, whether the settlers will adapt themselves to larger social aggregates or the townships will soon subdivide into traditional village communities.

## C. "The Least Developed Group"

### THE CASE OF NEPAL

*Spatial Dimension of the Fourth Plan* (*1970–1975*) Nepal comprises three main regions—the Himalayan, the Central (or Hills) and the Terai. In the Himalayan region population is sparse and the main economic activity is barter trade; the region is a marginal area for human occupance due to the harsh environmental conditions. The Central or Hills region traversing the subtropical belt has been the traditional population zone of the country. Subsistence agriculture forms the basis of the hill economy. The Terai Region encompasses the low-lying tropical plains along the southern part of the country. Once a negative settlement zone due to malaria, it has since acquired greater economic importance because of the rich forest and agricultural resources. These geographical regions correspond to the altitudinally arranged ecological zones and naturally imply inherent differences in natural endowment. "People living in small and isolated communities are cut off from each other by streams, rivers and mountain ranges, and each isolated region tends to follow a pattern of subsistence economy of the most primitive and rudimentary type . . . communication system is a formidable barrier to utilize the natural resources for the benefit of the communities."[106]

Regional disparity is amply demonstrated in Table 5. The disparity problem in the country manifests itself in the three following dimensions: (a) north-south dualism (Hills vs. Terai) with a very weak link between the food-deficient Hills and food-surplus Terai region; (b) urban-rural dichotomy. This tendency is particularly striking in the case of the Kathmandu Valley where its metropolitan dominance has led to the aggregation of over one-third of the development projects since the beginning of the planning process; (c) interregional differences among the easterm (Kose), central (Gandaki) and western (Karnali) sectors of the country. The Terai as well as the Hills of the far western part of the country are comparatively less developed than other similar areas. The Karnali sector, which accounts for nearly 42 per cent of the total area supports only 21 per cent of the population.

Unfortunately, as the official Nepalese document says, inherent and natural differences have been accentuating during the last decade mainly

TABLE 5
REGIONAL DISPARITY IN NEPAL

| Criteria | Himalayan and hills regions | Terai | Kathmandu Valley | Nepal |
|---|---|---|---|---|
| 1. Land area (percentage) | 74.8 | 24.8 | 0.4 | 100 |
| 2. Population (percentage) | 58.7 | 36.4 | 4.9 | 100 |
| 3. Population density (per square mile) | 157 | 244 | 2110 | 173 |
| 4. Cultivated area (percentage) | 31.8 | 65.3 | 2.9 | 12 |
| 5. Food grain (metric tons) | −229,869 | +565,852 | — | +335,983 |
| 6. Large-scale industry (percentage) | — | 62.5 | 37.5 | 100 |
| 7. All-weather roads (percentage of mileage) | 45.4 | 34.4 | 20.2 | 100 |
| 8. Number of development projects (1956–70) (percentage) | 14.0 | 28.0 | 34.0 | 22* |

Note: * Nationwide projects.
Source: His Majesty's Government, National Planning Commission. The Fourth Plan (1970–75), Kathmandu, 1970.

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[106] B. Karki, "Roads in Nepal", in: *Industrial Digest*, Kathmandu, 1968, p. 71.

through unplanned investment.[107] This fact is particularly obvious from the present industrial projects distribution pattern. The narrow strip of Terai region claims 25 industries of the total large-scale, and of these 19 are confined to Eastern Terai. The remaining industries are all located in Kathmandu Valley, leaving the rest of the country an industrial blank.

The excessive concentration of economic and social activities in a few centres with the eastern part of country stagnant made it imperative to undertake efforts towards minimizing regional differences. Although 15 years after planning had been introduced in Nepal, it still presents a rather unique case for the country at such a low level of development. This merits some additional consideration.

The Nepalese emphasis on regional development presents a clear cut attempt to use regional development planning for the attainment of the *main national* objectives.[108] In other words, regional develpment is considered to be a tool (or technique) in strengthening national development effort first and foremost, while achieving more equal distribution of income and other amenities definitely come second. There are several major reasons behind this policy in Nepal. Some are common to other small, land-locked countries of the ECAFE region. Indicating the size and behaviour of markets, the shortage of foreign exchange, dependence on co-operation with neighbouring countries as factors which made the problems of land-locked countries far more difficult than those of other least developed ones, the recent UN study noted: "These countries should orient their policies to regional development to ensure that no single packet or area is neglected."[109] To this, the following strong national considerations should be added: (1) a very high degree of diversity in physical setting in Nepal; (2) the urgent necessity to integrate the national economy by establishing the nature and scope of the complimentarity of northern and southern parts of the country; (3) the desirability of political integration of the north and the south; (4) diversion of the grain surplus flow from the South of India (owing to better communication facilities) but rather towards the South-Hills food-deficit area.

In an attempt to contribute towards achievement of these goals, the regional strategy for national development envisages a series of north-south growth axes or development corridors linking the diverse regions. It is assumed that the juxtaposition of a wide range of resources within a common development corridor will permit economic viability and generate greater interregional circulation of goods, services and people. This policy being feasible in economic terms might in due course produce fruitful results: the smallness of the country makes it likely that a co-ordinated approach in implementing this national strategy will be more effective.

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[107] The Fourth Plan, Annex 3, p. 6.

[108] Or, according to Hilhorst, they are: "Regional problems of national importance" as opposed to the "regional problems of regional importance". See Hilhorst, *Regional Planning*, Rotterdam, 1971.

[109] "The Special Problems Faced by Small Countries . . .", Asian Conference on Industrialization, Tokyo, 1970.

## THE CASE OF UGANDA

*Rural-urban Development Controversy* According to the Third Five Year Development Plan of Uganda, the two issues pertaining to the pattern of regional development are of growing importance: "First the disparity in general standards of living between rural and urban areas, and secondly, the variation in the level of development from district to district".[110] By mid-1971 Uganda's population was estimated at 10,130,000, of which 9,800,000 lived in rural areas. In recent years there has been a very rapid movement of people from rural to urban areas. Between 1959 and 1969 the growth of population in the urban areas of Uganda was 7.5 p.c. per annum—over twice the rate of total population growth. The result has been that in 1971 about 8 per cent lived in towns, compared to 2.4 per cent in 1959. On the basis of these facts, it would be reasonable to anticipate that over the coming few years the total urban population will continue to grow at rates approximating those experienced in the recent past. If this actually happens, the total urban population of Uganda will stand at about 1.5 million (or at least 11 per cent of total population) by 1980. The population of Kampala alone would exceed 750,000.

A prominent feature of the spatial aspect of Uganda's recent development was its concentration in a fairly distinct belt stretching from Masaka, bordering the western shores of Lake Victoria, to Bugisu, the boundaries of this axis of development correspond closely with the coffee/banana growing "fertile crescent" which is associated with more favourable climatic and soil conditions than generally prevail in other areas of the country. At the same time this region is the most urbanized area of the country; about 80 per cent of the total urban population is found here. Kampala, Jinja, Tororo and Mbale are all located here, and they harbour virtually all the light and heavy industry of the country. During the period 1966–69 26 of the total 31 new inustrial projects were located in this particular area leaving the rest of the country relatively unindustrialized.[111] Apart from this "fertile crescent", the urbanization process in the country is in a very infant stage.

It is not surprising that the above features of the economic development in Uganda resulted in a considerable gap between rural and urban incomes. In the course of the third plan preparation the attempt has been made to present a quantitative illustration of the degree of regional variations in incomes between the two main groups of national population. The graduated tax assessment returns have been laid as a function for this work as shown in Table 6.

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[110] Uganda's Third Five Year Development Plan 1971/72–1975/76, p. 93.

[111] E. Alaev: *Regional Planning in Developing Countries*, Moscow, 1973; p. 57 (in Russian).

TABLE 6

CUMULATIVE PERCENTAGE OF GRADUATED TAXPAYERS IN URBAN AND RURAL AREAS—1969

| Areas | Income per annum less than or equal to | | | | | |
|---|---|---|---|---|---|---|
| | Shs. 500 | Shs. 1000 | Shs. 1500 | Shs. 2000 | Shs. 2500 | Shs. 6000 |
| Rural (total) | 55.7 | 76.0 | 88.0 | 93.2 | 95.2 | 99.0 |
| Major towns | 6.0 | 16.3 | 21.8 | 44.3 | 56.1 | 78.3 |

*Source*: Uganda's Third Five Year Plan, p. 94.

The table obviously shows that roughly 90 per cent of all graduated taxpayers in rural areas earn an annual income of less than Shs. 1500 compared to about 20 per cent of the taxpayers in urban areas. While only one per cent of all taxpayers in rural areas earn above Shs. 6000 per annum, the comparable proportion in urban areas is over 20 per cent.[112]

Projections made in several official documents and studies revealed the fact that nothing much can be done in the foreseeable future to influence the present pattern of regional development in the country.[113] Having recognized the existence of the conflict between the national goal of increasing total production with the objective of obtaining more equal development in the regions, the geographical imbalance has been accepted as the inevitable price of economic advance. It has been indicated in the above mentioned documents that a shortage of capital, limited size of the local market and the lack of skills and managerial ability are the main constraints to the spread of any developmental impulses through the country in response to equity considerations and even political pressure. Besides, "the Government has no definite policy on industrial location and no pressure has been exerted on private investors to influence them in this matter."[114] The new development plan says: "Government will do nothing to direct industrial enterprises away from their optimum economic locations. On the contrary, positive support will be given to enable enterprises to be set up in such locations. Conversely, Government will not commit itself to any important level of special assistance to industries which get set up in uneconomic locations."[115] However, although implicitly, the need for a fair distribution of general economic development in the country has been referred to in the same document. An uneven distribution of exploitable natural resources and the unequal capacities of the various local authorities to provide economic and social services were mentioned among the basic causes of regional disparities. The key to more even distribution of economic activities is seen in bringing about of a considerable dispersal of agricultural activities. Of special relevance to the regional spread of agricultural production are the various schemes for making available for cultivation land which has been either uninhabitable or otherwise unsuitable for this purpose. Such are the schemes for tsetse eradication, bush clearing, swamp reclamation and the irrigation of new areas. The implementation of all these plans should have the effect of redressing to some degree the imbalance in the natural resource endowments of the different regions. A new plan, which places special emphasis on the development of social services in rural areas, makes a special provision for transferring the responsibility for matters of "vital importance to people's welfare, from the local authorities to the central Government. These are the two main "economic" and "institutional" measures which are supposed to ensure a better and more even distribution of economic activities among different regions. No provision for an administrative machinery is made to ensure the implementation of this programme or to accord regional planning its role in the national development strategy.

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[112] The value of the Ugandan shilling was approximately 6.9 to US $ 1 (1972).

[113] See M. Serwada, *Uganda Experience as Related to Problems of Industrial Location and Regional Development*, UNIDO document ID/WG. 9 *and The Challenge of Uganda's Second Five Year Development Plan*, Kampala, 1967.

[114] Serwada, *op. cit*., p. 3.

In essence, therefore, the Government's policy is to concentrate on expanding opportunities for gainful employment in rural areas and to make rural living generally more attractive from the social and cultural point of view. This policy bears a double function: its second inseparable aspect is to restrain the growth of towns through influx from rural areas as a long-term solution to urban unemployment problem.[116]

## Conclusion

The most general problems of regional development as identified earlier in this study, as well as the practical experience of some countries, make it obvious that the very notion of regional development in developing countries is rather different from what is usually understood under the same name in developed countries. In industrially advanced countries, regional planning is focussed on the problems depressed areas, environmental problems of expanding urban regions and regional adjustments to locational shifts in major economic activities. In developing countries regional planning is primarily concerned with development of a region's natural resources, spatial integration of national economy, alleviation of regional disparities and decentralization of decision-making.

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[115] Uganda's Third Plan, p. 112.

[116] See *Urbanization in the Second United Nations Development Decade*, New York, 1970, p. 21.

However, the policy recommendations made by planners in both developing and developed countries were normally based on the same theoretical foundation originally elaborated in the advanced economies. Numerous consequences followed from this. For instance, very often unable to find direct answers to their questions in the theoretical arsenal available to them, regional planners in developing countries were bound either do conduct their activity very pragmatically (and very differently from theoretical principles) or to cure some rather specific and narrow symptoms of regional troubles not being able to see the problems in all their complex interactions. The recent decade is characterized by numerous attempts to adapt the theories of regional growth to the conditions prevailing in developing countries. Still a task for the future, certain positive shifts are obvious, as has been indicated.

All matters pertaining to the problems of regional growth are being treated in an increasingly interdisciplinary manner and involve an increasing degree of national co-ordination. More attention has been given to the social and institutional aspects of these problems. Similarly, political factors are recognized to be inevitable in regional policy formulation. And this is not merely because all policy decisions have a political content (rural development and land reform, decentralization of executive power, etc.) but particularly due to the regional (geographical) organization of voting for national legislative institutions.

The experience reviewed above under 'Regional Development' shows that the decision in favour of one of the crucial issues of regional growth, the achievement of a higher rate of economic growth (efficiency goal) or more equal distribution of the fruits of development (equity goal) is always behind any political decision affecting further development. Or as Friedmann puts it: public policy-maker and planner "must find a path between the Scylla of efficiency and the Charybdis of equity". Present practice in developing countries shows that these two goals are constantly in conflict. Favouring the policy of concentrated development in regions with maximum returns on investment (efficiency goal) while serving the purpose of the GNP growth is often accompanied by deteriorating regional conditions in economic, social and cultural terms, creating difficult political problems for governments. On the other hand, pursuing the equity goal, that is equal distribution of resources, incentives and benefits led to dispersion of the country's scarce resources of different types. Although for the last decade, the presence of both efficiency and equity goals might be traced in national development plans, it is obvious that the former has been given priority. This does not exclude that over the same period of time the specific weights attached to the various objectives did not vary from one plan to another (from growth to equality and vice versa).

Present thinking on equity-efficiency dilemma is more characterized by the understanding of the "dual" nature and objectives of regional planning. "It is an 'end' insofar as its purpose is to benefit the various regions; and it is at the same time a 'means' insofar as it constitutes an instrument of national development policies and strategy".[117] Or in other words, development of the most prospective regions of the country and the effective allocation of all domestic resources in general contribute to increasing aggregate national objectives, while distributional aspects of development are obviously better served when regional considerations are taken into account. The question which still remains to be answered is at what point is implementation of policies based on equality objectives not detrimental to the general growth objectives. In general, as it has been indicated earlier, this policy is more justifiable when this policy is reinforced by some economic advantage or when economic forces "started to shift a little in favour of the lagging regions". In practice, the correct answer could be found only in the course of the comprehensive analysis of a given situation in the country. As a common trend, it should be noted that a "new generation" of national development plans formulates regional "equity" goals more explicitly than before. This reflects a new orientation of development strategy with its shift in focus from *things* to *people*, from the preoccupation with the production *per se* to the *"capacity to produce"*, from polarized development in a few areas to the problem of transmission of the development impulses through the socio-economic system of the country.

This re-orientation of development priorities has created a certain new basis for regional planning which is more recognized as being one of the more important instruments of a unified socio-economic approach to planning, and is very promising in finding answers to the fundamental question: how can growth and change in developing society be achieved. Another reason for regional planning to gain more importance is in a gradual move of the countries towards relatively more mature stage of development. It should be admitted that with some exceptions (land-locked countries, extremes in physiography, etc.), regional development planning becomes feasible only at a later stage of development, whereas take-off stage is characterized by extreme differences in regional development.

The present analytical technique of regional planning as well as its organization leaves much to be desired although it has the same shortcomings which are common to the national planning, the lack of regional breakdowns in national statistic and shortage of qualified personnel on the spot add to the problem.

One more remark in conclusion: the material presented above is not intended to be a comprehensive summation of the theory and practice of regional development in developing countries. Rather, the material was intended to present some basic concepts and review recent practical experience. It is hoped that in so doing it may stimulate further efforts aimed at arriving at some useful innovations applicable at both the national and regional level.

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[117] Utria, *op. cit.*, p. 53.

Original Source: *Studies on Developing Countries*, Institute of World Economies of the Hungarian Academy of Sciences, Budapest.

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## *BOOK REVIEWS*

### THE MULTINATIONAL CORPORATION IN THE 1980s

KINDLEBERGER, CHARLES P. AND DAVID B. ANDRETSCH (edt), The MIT Press, Cambridge 1983, pp. 368.

*Reviewed by* RAMESHWAR TANDON, Institute for Social and Economic Change, Bangalore (India)

This volume brings together Papers presented at the Fourth Annual Middlebury College Conference on Economic issues held in April 1982. In the early 70s the enthusiasts saw the MNC as a vehicle by which mankind was transcending the nation-state and creating a welfare oriented world order. But in the early 1980s, the tone of discussion has changed; this diminished Political Profile reflects various changes in bargaining power and bargaining by companies and governments.

What is more important in the longer term is the cause of declining American Power. The fashionable European concern of the 1960s over the technology gap and the American investments were bound to be self-curing to some extent. The central question now is, as Verson puts it, "how do Sovereign states propose to deal with the fact that so many of their enterprises are conduits through which other sovereign states exert their influence."

In the first Paper Magee and Young develop a model that adds the optimising behaviour of two lobbies and two Political Parties to the standard two good—two of actor, small country model, based on game theoretic equilibrium.

B. Kogot argues in his Paper that current foreign direct investment must be understood as largely sequential flows due to advantages of flexibility of a multinational system. When FDI is transmitted in the form of fixed capital with known technology the bargaining position of the MNC and host government is reversed. Mining is a classic example here.

Hence the benefits of institutional arbitrage, learning curve effects and joint production economies create substantial barriers to entry. Moreover the tendency of the MNCs to expand their trading divisions is derived from the hazards of obsolescent bargain and from the erosion of market advantages, as the original technical edge in some products evaporates. The MNC of the 1980s is likely to be engaged less in equity investments in Primary extraction, but relatively more in marketing and consulting services.

Paul Krugman develops a simple model of trade in differentiated goods, the motivation for trade here is the presence of fixed costs and production which limited the variety of products any country could produce. In this model, countries want to trade because they have acquired different technology taking the form of knowledge of how to produce different goods.

GasPary develops hypothesis that the elements of domestic market structure provide a basis for a firm's foreign market operations, which constitute a significant barrier to entry in the domestic market. Significant differences are observed between the elements of domestic industry structure as incentives to invest abroad or to export and as barriers to new domestic competition. While some determinants of domestic market power and foreign market operations may coincide, the coincidence is not so strong as to frustrate attempts to differentiate between the two.

Morris Adelman suggests that we should infact expect more horizontal and vertical integration than by chance alone. A particular kind of market failure may explain a particular case, but market failure is neither necessary nor sufficient for multi-regional operations.

The legend of a short-fall caused by the Iranian revolution is not even a half truth. The oil consumption never greatly exceeded production; it stayed within the range of variation which inventories cover. At any and every moment, the Saudis could have turned the market completely around and brought the price down by letting it be known that they would produce at capacity for an indefinite period.

Richard, Newfarmer suggests that behind the association between MNCs and Oligopoly is a blend of behavioural and technological causes. The patented technology forms part of the unique package of assets that is monopolistic advantage of the MNCs and it is just possible that the Oligopolistic patterns of behaviour found at home will spill-over into international markets. There is persuasive evidence that foreign investment is strongly linked to domestic Oligopoly in the host country and that domestic Oligopoly generates high profits for those fortunate to operate in these markets. Also there is evidence that market structure including the degree of consultation, barriers to entry also influence technical choice.

One reason why this question is so difficult to resolve is that technical change is bound up closely with changes in products. With the increasing importance of overseas banking, the possibility arises that financial corporations may engage in transfer pricing on foreign exchange transaction, accentuating the difficulty of controlling non-market financial transactions. Hence there is strong reason to believe that the MNCs alter the nature of growth in ways that do not always promote broadly shared development.

Reed argues that the basic determinants of foreign direct investment activity are best explained by determining the motives and methods of evaluation, employed by supra-national financial centres. Moreover the portfolio theory of FDI was followed by explanations based on internalization and appropriability motives. It was argued that due to imperfect knowledge in market place, the MNC develops into its own external markets in intermediate items. The emphasis was on vertical integration—increasing control over all activities taking place within the firm.

Aliber argues that shortcoming of most theories of FDI and other synthetic-inclusive theories is that they are 'under determined'. For the world economy as a whole, growth of MNCs is cost efficient, just as expansion of firms within national markets is cost efficient. Then substantial differences in real interest rates confirm the proposition that national money and capital markets are segmented significantly and this provides an incentive for firms to grow and expand beyond national borders. Really the risk premium required by portfolio investors to take on foreign exchange exposers is higher than that deemed appropriate by corporate managers.

McClain explores the notion of small-country product cycle that serves to emphasize the unique characteristics of world economy in the 50s and 60s.

In a broad sense the foreign direct investment experience in the U.S. confirms to the theory of direct investment developed a decade back. But in view of the new wave of foreign direct investment, there is no need for a change as such. Moreover Magee suggested viewing the operations of MNCs as international trade in information. Both importers and exporters of information will be attentive to optimal tariff considerations. With foreign firms investing in the U.S. to exploit and to acquire knowledge-based advantages, the U.S. is on both sides of the markets.

In most circumstances surrounding the import of capital and technology, as Johnson observed, "foreign direct investment cannot harm a country and may confer substantial benefits upon it". As far as export of technology is concerned, the response of U.S. corporations in high technology sectors will be to develop ever more sophisticated techniques of production, to increase their appropriability and limit their rate of diffusion.

## THE INDIAN FINANCIAL SYSTEM

*By* R. K. SESHADRI, Institute for Financial Management Research, Madras 1985, p. 287, Rs. 75.00

*Reviewed by* C. N. SUDARSANAN

The Indian financial system has a unique stamp of its own. Several streams of administrative heritage and cultures have left their footprints on the sands of financial history of India. The system of land revenue administration introduced by Sher Shah and Akbar found its way into British administration. Its basic features have remained intact till today.

The financial system, as it exists today, was developed by foreign rulers. The British, soon after taking over the administration of the country from the East India Company in 1858, introduced a highly centralised system of financial administration in India. This was in line with the British policy of consolidating their hold on the country and also to meet the requirements of the situation.

The British wanted to introduce order and discipline in the system of financial control, which had been quite loose during the regime of the East India Company. Also, the British Government was interested in undertaking in India, a few activities only, namely, collection of revenues, maintenance of law and order and some economic activities primarily for the protection and furtherance of British trade.

Thus, a centralised system of financial control suited the interests of foreign rulers, which based on lack of trust of functionaries, was made a characteristic feature of the colonial administration. Independence brought a sweeping change in the character and scope of Government in India. The system of financial administration introduced by the British was found wanting in dealing with the dynamic needs of planning and implementation of massive programmes of economic development and social change. New systems, tools and techniques in budgeting, accounting and audit, etc., were needed to meet the challenges of development administration in the country.

With the increase in the character and functions of Government under the various Plans, the government expenditure had also increased considerably. As a result the existing arrangements for handling governmental transactions as well as maintenance of currency and other accounts have become very complicated. The few books available on Financial Administration, though dealt with subjects like Fiscal Policy, Tax Administration, Centre-State Financial Relations, Delegation of Financial Powers, Parliamentary Financial Control, Separation of Accounts from Audit, etc., have not examined the system with particular reference to currency, government exchange and other connected accounts. R. K. Seshadri has sought to fill this gap. His book is based on facts and information published by the Reserve Bank of India and other Government agencies.

The book, which consists of 35 chapters, has been divided into three parts. The first part (Chapters 1 to 8) traces the origin and development of financial and accounting system in India right from the early British period till today. The author has given a detailed account of the features of indigenous banking system (Chapter III) and the steps taken by the British from time to time to bring about uniformity in the management of cash transactions and currency system (Chapter V). The author has collected a lot of material from books and records to explain the rationale of various reforms and their effect on the Indian financial system.

The second part (Chapters 9 to 31) gives a lucid account of the operations of the accounting system in the Central and State Governments, and also the checks and balances in operation at various levels. To explain the issues clearly, the author has added a number of charts indicating the flow of transactions and the adjustments in the operation on the currency chests, the adjustments in the Goverment of India's accounts in respect of the issue and retirement of one rupee notes, and also the transaction cleared through the settlement account between the Central and State Governments.

The third part (Chapters 32 to 35) discusses some of the special features of the Indian Financial System, with several suggestions for improvement. In particular, the author has suggested introduction of mechanisation for handling currency and bank notes, electronic data processing for preparation and settlement of accounts of Government agency business by the commercial banks, for the compilation of accounts in the treasury, pay and accounts officers and in the officers of the Accountant General, and increasing use of cheques for both payment into and payment out of the Government's accounts except in respect of transactions of less than Rs. 250/–. He has also suggested some improvement in the preparation of performance budget documents and the need for the creation of an independent audit organisation, to be carved out from the office of the Director of Audit, Central Revenues, to audit the External debt accounts which are kept in various currencies and to compile an audited monthly return of the outstanding foreign debt, expressed both in foreign currencies concerned and in Indian rupee. Since the suggestions made by the author have come out of his rich experience. by working in the Finance Ministry and Reserve Bank of India at a policy-making level, they should not be treated as merely academic and deserve due consideration at the highest level in the Finance Ministry, particularly at this juncture, when the Government is taking various steps to effect economy in expenditure and increased efficiency in the operations of various Government Departments.

On the whole, the book will prove very useful to Government functionaries, chartered accountants, and commercial and Central Bankers. Besides, students and teachers of Financial Management will find it both relevant and informative.

# ASIAN JOURNAL OF ECONOMICS AND SOCIAL STUDIES

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*BELA BALASSA*

A Stages Approach to Comparative Advantage

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ASIAN JOURNAL OF ECONOMICS & SOCIAL STUDIES Vol. 3, No. 3 (1984), 1–35

# A 'STAGES APPROACH' TO COMPARATIVE ADVANTAGE*

BELA BALASSA

*Professor of Political Economy*
*at the Johns Hopkins University and Consultant to the World Bank*

This paper will examine intercountry differences in export structure, with a view to indicating the changing pattern of comparative advantage in the process of economic development. The investigation will be limited to exports, since the commodity pattern of imports is greatly influenced by the system of protection in the importing countries. And, as trade in natural resource products depends to a considerable extent on the country's resource endowment, we will deal with comparative advantage in manufactured goods alone.

Section I of the paper will consider the relevance for the developing countries of explanations of international specialization based on factor proportions and technological variables. Section II will describe the product classification schemes and country characteristics used to evaluate comparative advantage. The empirical results on the changing pattern of comparative advantage will be presented in Section III; they will be further analysed in Section IV. Section V will indicate the policy implications of the results.

## I

Hufbauer (1970) was the first to introduce the distinction between the neo-factor proportions and the neo-technological explanations of comparative advantage. The former combines human capital with physical capital and relates the sum of the two to (unskilled) labor. In turn, the latter emphasizes the role of technological change, the product cycle, and economies of scale in determining the pattern of international specialization.

According to Hufbauer, if technological factors "were somehow combined into a single characteristic, that characteristic might prove as powerful as Lary's single measure (value added per man) of human and physical capital in explaining trade flows" (1970, p. 196). While such a

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*The paper was prepared in the framework of a Consultant arrangement with the World Bank but it should not be interpreted to reflect the Bank's views. The author is indebted to Dominique de Crayencour, Jonathan Levy and especially to Kishore Nadkarni for research assistance. He has benefited from comments on an earlier version of the paper by T. N. Srinivasan and other participants of a Seminar held at the World Bank. Presented at Fifth World Congress of Economists, Tokyo (1977). (Reproduced by Courtesy of Macmillan Press Ltd., London.)

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single characteristic has not been established, it has been suggested that "there appears to be a new consensus emerging concerning the power of the neo-technology theory over the neo-factor proportions theory" (Goodman-Ceyhun, 1976, p. 551).

The results of several recent studies on U.S. trade tend to support this conclusion. Goodman and Ceyhun have found that "the variables describing different facets of the technology phenomena are singularly the most important variables, which suggest the importance of the neo-technology hypothesis in the explanation of international trade in manufactures" (*op. cit.* p. 547). Similar results have been reached by Baldwin (1971) and by Branson and Junz (1972).

These authors have shown that net U.S. exports are negatively correlated with physical capital intensity. Baldwin also finds that general measures of human capital, such as the average cost of education, average years of education, and average earnings, are not statistically significant[1] in explaining U.S. trade. And, while the human capital variable is positively correlated with net exports in the Branson-Junz study, its level of statistical significance is greatly reduced once technological variables are introduced in the equation.

Among technological variables, R & D expenditure performs the best in the Branson-Junz study whereas Baldwin finds the number of engineers and scientists to be the most important explanatory factor, adding further that "probably of even more importance is the fact that a significant part of this labour group is engaged in research and development activities" (1971, p. 142). Finally, Morall concludes that "the United States' comparative advantage in skill intensive products must be due to mechanisms such as the product cycle model, the government subsidy of R & D explanation, the economies of scale in R & D arguments, or the dynamic shortage theory" (1972, p. 120).[2]

The results obtained for the United States, however, have limited relevance for our inquiry into the changing pattern of comparative advantage for the developing countries. These countries are at the other end of the spectrum from the United States and engage in research and development to a very small degree, if at all.[3] Accordingly, we will next consider the determinants of trade between developed and developing countries.

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[1] This conclusion applies also in U.S. trade with Canada, Western Europe, the developing countries, and the rest of the world other than Japan, although statistically significant results were obtained for U. S. trade with Japan, (1971, p. 140).

[2] A dissenting voice is that of Harkness and Kyle (1975). However, the results of these authors were obtained by replacing a continuous variable (net exports or export-import ratios) with a binary variable, classifying industries into two groups according to whether exports exceed, or fall short of, imports. This choice brings into question the validity of the results, in part because of the error possibilities involved in a binary classification and in part because large and small export-import balances are given equal weight.

Postulating that light manufactures are relatively labour intensive and heavy manufactures capital intensive, Kojima (1970) has concluded that the factor proportions explanation is valid to trade between developed and developing countries. Defining capital intensity in terms of value added per man, taken to reflect the use of physical as well as human capital, Lary has also found that developing countries tend to export labour-intensive manufactures (1968, Ch. 4). This conclusion has been reinforced as regards U.S. imports from developing countries by Mahfuzur Rahman (1973), who defined capital in physical terms, and for German imports from developing countries by Fels (1972), who defined capital as the sum of the value of the (physical) capital stock and the discounted value of the difference between average wages and unskilled wages in particular industries, taken as a proxy for human capital.

In examining trade between developed and developing countries, however, these authors have divided a continuum more-or-less arbitrarily into two segments, hence their estimates cannot be used to indicate changes in the pattern of comparative advantage in the process of economic development. Continuous variables as regards country characteristics have been used by Hufbauer in attempting to explain intercountry differences in the average values of particular product characteristics.[4] But in his sample of 24 countries Hufbauer has included only 9 countries which may be considered developing, and most of these belong to the semi-industrial group (1970, p. 157).[5]

In turn, Hirsch (1974) has classified 18 industry groups in three categories, according to whether the correlation between export performance and value added per worker in the nonagricultural sector, estimated in an intercountry framework, was positive, zero, or negative. Hirsch has also made estimates for individual countries by regressing export-output ratios in the 18 industry breakdown on the skill, physical capital, scale, and natural resource characteristics of these industries, and has grouped the results obtained for the 29 countries studied into four categories according to their per capita incomes (high income, medium high income, medium low income and low income groups). No attempt has been made, however, to establish a relationship between the two sets of estimates. Considering further the low level of significance of the estimated regression coefficients in the country equations, the crudeness of the fourfold country classification scheme, and the high degree of commodity aggregation[6], the results have remained rather impressionistic.

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[3] This conclusion also applies to Leamer's findings as to "the clear superiority of the research and development variable" (1974, p. 369) in determining export-import ratios for two-digit SITC categories in a group of twelve developed countries including the United States, who carry out much of their trade with each other.

[4] E.g. the average physical capital intensity of exports was related to intercountry differences in physical capital per man.

[5] On the definition used, see Section III below.

Finally, Herman and Tinbergen (1970) and, subsequently, Herman (1975) have classified countries into eleven categories on the basis of their physical and human capital endowments. However, the sources cited provide no information that would permit estimating physical capital endowments and the proxy used for human capital (the cost of educating professional, technical, and related workers classified in Group 0/1 in the International Standard Classification of Occupations used by the ILO) includes personnel in liberal occupations, such as jurists, preachers, artists, and athletes while excluding production supervisors, foremen, and skilled workers that are of considerable importance in the developing countries. Also, the results derived regarding comparative advantage have not been subjected to statistical testing.

## II

We have briefly reviewed recent efforts made to examine the pattern of comparative advantage,[7] with emphasis on the relevance of the results for the developing countries. It has been shown that applications of the neotechnological theory largely pertain to U. S. trade, particularly with the developed countries. In turn, in statistical investigations that have included developing countries, these countries have been considered as a group or, alternatively, they have been classified on the basis of a single criterion, such as per capita incomes or average value added per employee in the nonagricultural sector.

In the latter case, intercountry regressions have been estimated by relating average product characteristics for all manufactured exports or for aggregate industry-groups to a particular country characteristic. A considerable degree of commodity aggregation has been employed also in examining the relationship between product characteristics and the export structure of the individual countries in an interindustry framework. At the same time, no linkage has been established between the intercountry and interindustry estimates.

A different approach has been followed in the present study. Thirty-six countries have been chosen for the investigation, of which 18 are developed and 18 developing. For each country, regression equations have been estimated relating their "revealed" comparative advantage in 184 product categories in the year 1972 to various product characteristics. The regression coefficients thus obtained have in turn been correlated with particular country characteristics in inter-country regressions so as to indicate the effects of these country characteristics on international specialization.

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[6] An even greater level of aggregation (1-digit Standard International Trade Classification categories) is used by Banerji who distinguishes among four commodity categories and has not been successful in introducing variables directly expressing comparative advantage in the regression equations (1975, Ch. III).

[7] For an excellent review of earlier contributions the reader is referred to Stern (1975).

The first question concerns the choice of product characteristics for the investigation. Harry Johnson has suggested to extend the concept of capital to include human capital as well as intellectual capital in the form of production knowledge, noting that "such an extension is fully consistent with Irving Fisher's approach to the relation between capital and income" (1970, p. 17). However, as Branson observes, the aggregation of various forms of capital assumes that they are perfect complements or perfect substitutes in production[8] (1973, p. 11).

In the present study, we have experimented with an aggregate measure of capital as well as with separate variable for physical and human capital.[9] Investment in research and development has been subsumed under the two, as this is in part embodied in physical capital (e.g. laboratories) and in part in human capital (scientists and engineers engaged in R & D). This procedure appears appropriate in an investigation of the changing pattern of comparative advantage in the process of development since, as noted above, developing countries carry out hardly any R & D, so that little is lost in combining intellectual capital in the form of production knowledge with physical and human capital.

Capital intensity may be defined in terms of flows (Lary's measure of value added per worker) or stocks (the value of the capital stock plus the discounted value of the difference between average wages and the unskilled wage, divided by the number of workers). The latter approach was used by Kenen (1965) and, recently, by Fels (1972) and by Branson (1973)

The stock measure of capital intensity ($k^s$) is expressed in (1)

$$k_i^s = p_i + h_i = p_i + \frac{\overline{w}_i - w_i^u}{r^h} \tag{1}$$

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[8] On the complementarity of physical and human capital, see Fallon and Layard, 1975.

[9] Physical and human capital have also been separated in a recent article by Hirsch, which has come to the author's attention after this paper was completed. Hirsch makes a distinction between high-skill and low-skill industries, further separating (physical) capital and (unskilled) labor-intensive industries within each. For each group, export performance is related to incomes per head, taken as a proxy for physical *and* human capital (Hirsch, 1975). Thus, in contradiction with the present study, an aggregated commodity classification scheme is used and capital endowment variables are not introduced in the analysis. Also, the human capital intensity of the different product categories is defined in terms of skill intensity, which was criticized in connection with the Herman-Tinbergen study above.

for industry $i$, where $p_i$ and $h_i$, respectively, refer to physical and human capital per man, $\bar{w}$ is the average wage rate, $w^u$ the wage of unskilled labour, and $r^h$ the discount rate used in calculating the stock of human capital. This approach implicitly assumes that the rental price of physical capital, i.e. the risk-free rate of return and the rate of depreciation, is the same in all industries. This assumption is made explicit in expressing the flow equivalent (FE) of the stock measure of capital intensity as in (2), where $r^p$ is the

$$(\text{FE})k_i^s = p_i(r^p + d) + (\bar{w}_i - w_i^u) \tag{2}$$

discount rate for physical capital and $d$ is the rate of depreciation.

In turn, the flow measure of capital intensity ($k^f$) can be expressed as in (3) where $va$ refers to value added per man. Now, nonwage value added

$$k_i^f = va_i = (va_i - \bar{w}_i) + \bar{w}_i = (va_i - \bar{w}_i) + [(\bar{w}_i - w_i^u) + w_i^u] \tag{3}$$

per man ($va_i - \bar{w}_i$) is taken to represent physical capital intensity and wage value added per man ($\bar{w}_i$) human capital intensity.

As far as physical capital intensity is concerned, the two measures will give the same result in risk free equilibrium, provided that product, capital, and labor markets are perfect and nonwage value added does not include any items other than capital remuneration. However, production is subject to risks that vary among industries and assuming risk aversion, profit rates will include a risk premium that will differ from industry to industry. Also, the situation in a particular year will not represent an equilibrium position and this fact, as well as imperfections in product, capital, and labour markets, will further contribute to interindustry variations in profits. Moreover, nonwage value added may include items other than capital's remuneration, such as advertising.

Finally, while the stock measure imputes differences between average wages and the unskilled wage to human capital, the flow measure includes the entire wage value added under this heading, thus overestimating human capital intensity by the amount of the unskilled wage. This would not give rise to problems if the unskilled wages were the same in every industry. However, unskilled wages may differ among industries due to factors such as the disutility of work and the power of labour unions.

The existence of interindustry differences in risk, market imperfections, the inclusion of items other than capital's remuneration in non-wage value added, and the inclusion of unskilled wages in wage value added represent deficiencies of the flow measures of capital intensity. In turn, the lack of consideration given to interindustry differences in depreciation rates and in the extent of obsolescence of existing equipment, as well as the use of historical rather than replacement values for physical capital, represent disadvantages of the stock measure.

The implications of the described shortcomings of the two measures of capital intensity for the results will depend on the particular circumstances of the situation. The usefulness of the stock measure would be greatly impaired in an inflationary situation where historical and replacement values differ and the magnitude of their differences varies with the age of equipment. This is not the case in the present study since the benchmark years used for estimating capital intensity (1969 and 1970) are part of a long noninflationary period. By contrast, observed interindustry differences in profit rates reduce the usefulness of the flow measure.

These considerations tend to favour the use of the stock measure of capital intensity. Nevertheless, given the error possibilities involved, interest attaches to making estimates by the use of both measures[10], which also permits us to examine the stability of the results derived under alternative assumptions. This has been done in the present study, with emphasis given to the estimates obtained by the use of the stock measure in evaluating the results.

For purposes of the calculations, we have attempted to obtain data on the capital intensity of the production process for Japan, the factor intensities of which may be presumed to lie in-between the relevant magnitudes for highly-developed and less-developed countries. However, for lack of information on physical capital and on unskilled wages in a sufficiently detailed breakdown, this attempt had to be abandoned and we have had to have recourse to U.S. data.

The use of U.S. data in the investigation will be appropriate if factor substitution elasticities are zero or they are identical for every product category. While this assumption is not fulfilled in practice, Lary has shown variations in capital intensity to be small in U.S.–U.K., U.S.–Japan, and U.S.–India comparisons as regards his value added measure (1958, Appendix D). For lack of data, similar comparisons could not be made for the stock measure and the further investigation of this question had to be left for future research.

In defining the manufacturing sector for purposes of the present investigation, we have taken the concept used in the U.S. Standard Industrial Classification (SIC) as our point of departure. We have excluded from this category (SIC 19 to 39), foods and beverages (SIC 20) and tobacco (SIC 21), where the high cost of transportion and the perishability of the basic material give an advantage to primary-producing countries. We have further excluded primary nonferrous metals (SIC 333) where transportation costs account for a high proportion of delivered price of the basic material, and ordnance (SIC 19) where comparable trade data are not available. In turn, given the relatively low cost of transporting the raw material (Cornwall, 1972) and the prevalence of exports based on imported materials, we have retained petroleum products and wood products in the manufactured product category. We have also retained nonmetallic mineral products by reason of the ubiquity of the basic materials.

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[10] Fels has employed both measures in correlating net German exports with capital intensity in a nineteen industry sample (1972, Table 3). In turn, Lary has used Hufbauer's data to calculate the rank correlation coefficient between country averages of value added per employee in exports and per capita incomes (1970).

Defining the manufacturing sector as SIC industry groups 22 to 39 less 333, the product classification scheme used in this study has been established on the basis of the 4-digit SIC categories. Particular 4-digit categories have been merged in cases when the economic characteristics of the products in question were judged to be very similar and when comparable data did not exist according to the U.N. Standard International Trade Classification, which has been used to collect trade figures. Appendix Table 1 provides information on the capital intensity of the 184 product categories chosen, using the stock as well as the flow measure of capital, and further separating physical and human capital. In turn, Appendix Table 2 shows the SIC and SITC categories corresponding to these product categories.

Data on the capital stock, employment, value added, and wages used in calculating capital intensity originate from the U.S. Census of Manufacturing. In turn, the data for unskilled wages have been taken from the *Monthly Labor Review*, published by the U.S. Bureau of Labor Statistics; they relate to 2-digit industries, thus involving the assumption that unskilled wages are equalized at this level.

In order to reduce the effects of variations due to the business cycle and nonrecurring events, we have used simple averages of data for the two latest years (1969 and 1970) for which information was available. Finally, we have estimated the value of human capital under the stock measure by discounting differences between the average wage and the unskilled wage for the individual product categories at a rate of 10 per cent.[11]

As noted earlier, the study covers altogether 36 counties. The sample is evenly divided between developed and developing countries; the countries in the first group had per capita incomes exceeding $1800 in 1972; incomes per head were below $1400 in the second group. The variability of per capita incomes is 1 : 3 in the developed country subsample, 1 : 13 in the developing country subsample, and 1 : 56 in the entire sample. Thus, the sample, and, in particular the developing country subsample, exhibits considerable variability, which permits indicating the changing pattern of comparative advantage in the process of economic development.

The distinction between developed and developing countries has been introduced in the econometric analysis through the use of a dummy variable for developed countries. At the same time, we have used continuous variables to denote country characteristics, including physical and human capital endowment. These are shown in Table 1 together with per capita incomes[12].

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[11] This is in-between the discount rates of 9.0 and 12.7 per cent used by Kenen (1965): the same discount rate was used by Fels (1972) and by Branson (1973).

In the absence of data on the physical capital stock in the individual countries, we have used the sum of gross fixed investment over the period 1955–71, estimated in constant prices and converted into U.S. dollars at 1963 exchange rates, as a proxy for capital endowment. The data have been derived from the *World Tables, 1976*, published by the World Bank; they have been expressed in per capita terms.

A similar procedure has been employed by Hufbauer, except that he used data for the period 1953–64 and included manufacturing investment only (1970, p. 157). The choice of a longer period in the present study reflects the fact that capital equipment is used beyond eleven years; also, we have considered all capital, and not only that used in the manufacturing sector.[13] In turn, in using value added per worker (1974, p. 542) as a proxy for capital endowment, Hirsch does not separate physical and human capital and neglects intercountry differences in profit rates and in unskilled wages.

Hufbauer has taken the ratio of professional, technical and related workers to the labour force in manufacturing as a proxy for human capital endowment (1970, p. 158). As noted earlier, the use of this measure is objectionable, because it includes various liberal occupations while excluding production supervisors, foremen, and skilled workers that are of considerable importance in the developing countries.

A more appropriate procedure appears to be to make use of the Harbison-Myers index of human resource development.[14] While this index is a flow measure,[15] the use of estimates pertaining to 1965 (Harbison, Maruhnic, and Resnick, 1970, pp. 175–6) permits us to provide an indication of a country's general educational level, and thus its human capital base, in 1972, the year for which trade data have been obtained. Nevertheless, we have also experimented with the skill ratio employed by Hufbauer, utilizing the data reported in the ILO *Yearbook of Labour Statistics*.

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[12] On the use of per capita incomes as one of the explanatory variables, see Section IV below.

[13] This choice can be rationalized on the grounds that, *ex ante*, capital can be allocated to manufacturing as well as to other sectors. And while adjustments would need to be made if there was complementarity between capital and natural resources in certain uses, such as mining information on the sectoral composition of investment was not available for a number of the countries under study.

[14] This index has also been used in a study of world trade flows by Gruber and Vernon (1970).

[15] It is derived as the secondary school enrolment rate plus five times the university enrolment rate in the respective age cohorts.

## TABLE 1
## COUNTRY CHARACTERISTICS AND REGRESSION COEFFICIENTS OBTAINED IN ESTIMATES FOR INDIVIDUAL COUNTRIES

| | Country Characteristics | | | | | Regression Coefficients | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | DUMMY | GNPCAP | GDICAP | HMIND | SKILLS | $\beta_j^s$ | $\beta_j^f$ | $\beta_j^{sp}$ | $\beta_j^{sh}$ | $\beta_j^{fp}$ | $\beta_j^{fh}$ |
| Argentina | 0 | 1139.65 | 2013.68 | 122.0 | 8.76 | .32 | .19 | .25 | −.04 | .60* | −1.49 |
| Australia | 1 | 3271.69 | 6675.24 | 183.3 | 10.93 | .34** | .78* | .23 | .12 | .50* | .09 |
| Austria | 1 | 2741.26 | 5129.72 | 112.9 | 10.08 | −.31* | −.93* | −.33* | .04 | −.64* | .03 |
| Belgium | 1 | 3701.15 | 5441.70 | 140.5 | 11.62 | .11 | .04 | .24* | −.11 | .51* | −1.30* |
| Brazil | 0 | 511.27 | 1016.00 | 29.3 | 8.57 | −.69* | −1.48* | −.35 | −.42 | −.74** | −.80 |
| Canada | 1 | 4691.51 | 7970.65 | 179.9 | 14.92 | .75* | .87* | .46 | .25 | −.22 | 2.25* |
| Colombia | 0 | 357.08 | 751.59 | 32.3 | 7.41 | −1.31* | −2.48* | −.06 | −1.31* | −.33 | −3.82* |
| Denmark | 1 | 4187.67 | 6259.56 | 139.2 | 13.63 | −.40* | −.12 | −.44* | .05 | −.15 | .08 |
| Finland | 1 | 2877.73 | 6999.27 | 109.9 | 14.89 | −.26 | −.62* | .08 | −.37** | −.32 | −.34 |
| France | 1 | 3841.68 | 7211.24 | 138.8 | 13.46 | −.07 | −.08 | −.06 | .002 | .11 | −.50** |
| Germany | 1 | 4218.84 | 7102.15 | 114.3 | 10.71 | .20* | .43 | −.05 | .26* | .05 | .69* |
| Greece | 0 | 1407.20 | 2196.43 | 93.7 | 9.60 | −.27 | −1.05* | .11 | −.49 | −.08 | −1.90* |
| Hong Kong | 0 | 1048.88 | 1370.61 | 60.7 | 5.09 | −2.30* | −2.84* | −1.83* | −.52** | −.94* | −3.15* |
| India | 0 | 102.03 | 214.25 | 50.2 | 9.64 | −1.10* | −2.30* | −.93* | −.09 | −.19 | −4.58* |
| Ireland | 1 | 1840.20 | 2701.89 | 110.7 | 12.53 | −.48* | −.80* | −.44* | −.04 | −.39** | −.66 |
| Israel | 1 | 2416.28 | 4280.96 | 148.9 | 19.19 | −.37* | −.70* | −.02 | −.41** | .27 | −2.02* |
| Italy | 1 | 2176.52 | 3366.47 | 91.3 | 7.05 | −.33 | −.46* | −.20** | −.12 | −.29** | −.06 |
| Japan | 1 | 2740.95 | 4765.11 | 146.2 | 8.26 | −.31** | −.52* | −.42* | .11 | −.70* | .86** |
| Korea | 0 | 301.03 | 402.89 | 66.7 | 6.15 | −1.67* | −3.02* | −.46 | −1.24* | −.69** | −3.91* |
| Malaysia | 0 | 408.62 | 494.56 | 34.5 | 9.53 | −.88* | −2.32* | −.26 | −.63** | −.56 | −3.65* |
| Mexico | 0 | 745.41 | 1067.02 | 41.1 | 9.22 | −.91* | −1.48* | −.17 | −.80* | −.40 | −2.38* |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Morocco | 0 | 279.13 | 293.08 | 27.9 | 8.23 | −1.18* | −2.95* | −.18 | −1.06* | −.23 | −6.10* |
| Netherlands | 1 | 3466.90 | 5375.15 | 158.6 | 11.62 | .28* | −.44* | .22* | .07 | .55* | −.67* |
| Norway | 1 | 3786.91 | 7806.11 | 107.4 | 13.91 | .22 | −.01 | .44* | −.25 | −.05 | .18 |
| Pakistan | 0 | 104.11 | 197.76 | 33.1 | 4.63 | −1.56* | −3.11* | −.93* | −.63 | −.51 | −5.78* |
| Philippines | 0 | 223.50 | 448.72 | 134.2 | 10.98 | −1.34* | −2.28* | −.07 | −1.39* | −.53 | −3.03* |
| Portugal | 0 | 1084.26 | 1154.43 | 68.1 | 5.09 | −.81* | −2.09* | −.01 | −.90* | −.82* | −1.80* |
| Singapore | 0 | 1354.41 | 1189.14 | 97.6 | 8.00 | −1.47* | −2.35* | −1.11* | −.38 | −1.03* | −2.01* |
| Spain | 0 | 1333.76 | 2049.09 | 63.4 | 7.28 | −.43* | −.56* | −.03 | −.42* | −.12 | −.82** |
| Sweden | 1 | 5141.10 | 9452.90 | 129.6 | 20.87 | .21 | .15 | −.16 | .39* | −.44* | 1.50* |
| Switzerland | 1 | 4810.02 | 8852.63 | 112.6 | 13.13 | .04 | −.10 | −.44* | .50* | .08 | −.23 |
| Taiwan | 0 | 481.94 | 629.88 | 103.5 | 7.06 | −1.56* | −2.61* | −.68* | −.87* | −.98* | −2.45* |
| Turkey | 0 | 431.16 | 581.22 | 37.5 | 10.32 | −.42 | −1.62* | −.06 | −.42 | −.36 | −2.01* |
| U.K. | 1 | 2765.25 | 4844.68 | 136.2 | 11.44 | .13 | .46* | −.18** | .34* | .19 | .31 |
| U.S.A. | 1 | 5679.47 | 7616.20 | 325.0 | 14.21 | .84* | 1.47* | .24** | .62* | .23 | 2.22* |
| Yugoslavia | 0 | 798.30 | 1162.06 | 110.0 | 13.73 | −.47** | −1.41* | −.29 | −.20 | −.81* | −.60 |

*Country Characteristics*: DUMMY—1 for developed, 0 for developing countries; GNPCAP = GNP per capita in 1972, $US;
GDICAP = Cumulated gross fixed investment per capita, 1955–71, $US;
HMIND = Harbison-Myers index;
SKILLS = share of professional, technical and related workers in the total non-agricultural labour force.

*Regression Coefficients* have been obtained by regressing for each country the ratio of 'revealed' comparative advantage, estimated for 184 product categories, on measures of capital intensity. The coefficient $\beta^s$ has been estimated by regressing the comparative advantage ratio on the stock measure of total capital intensity as in (4), while $\beta_j^{sp}$ and $\beta_j^{sh}$ have been obtained by regressing this ratio on physical and human capital intensity, introduced simultaneously in the estimating equation as in (5), again using the stock measure of capital. $\beta_j^f$, $\beta_j^{fh}$, and $\beta_j^{fh}$ are the corresponding regression coefficients estimated by substituting the flow measure of capital in the place of the stock measure in (4) and (5).

Regression coefficients that are significant at the 5 per cent level have been denoted by * and those significant at the 10 per cent level by **.

## III

As noted in the introduction, the investigation is limited to exports since the commodity pattern of imports is greatly influenced by the system of protection. Following earlier work by the author (1975), a country's relative export performance in the individual product categories has been taken as an indication of its 'revealed' comparative advantage.

For this purpose, we have calculated the ratio of a country's share in the world exports of a particular commodity to its share in the world exports of all manufactured goods. Thus, a ratio of 1.10 (.90) means that the country's share in a particular product category is 10 per cent higher (lower) than its share in all manufactured exports.[16] These ratios can be considered to express a country's comparative advantage in manufactured goods that are characterized by product differentiation and are hence exported by a variety of countries.

For each of the 30 countries, the ratio of 'revealed' comparative advantage, calculated for the individual product categories, has been regressed on variables representing the capital intensity of the individual product categories. Separate equations have been estimated using the stock and the flow measures of (total) capital intensity, as well as by simultaneously introducing physical and human capital under the two definitions of capital intensity.

The estimating equation is shown in (4) for total capital intensity

$$\log x_{ij} = \log \alpha_j + \beta_j^s \log k_i^s \tag{4}$$

and in (5) for physical and human capital intensity for the case when the stock measure of capital is used. The same equational forms have been used in conjunction with the flow measure of capital.

The equations have been estimated in a double-logarithmic form,

$$\log x_{ij} = \log \alpha_j + \beta_j^{sp} \log p_i^s + \beta_j^{sh} \log h_i^s \tag{5}$$

so that the value of the $\beta$ coefficient for country $j$ indicates the percentage change in the country's comparative advantge ratio $(x_{ij})$ associated with a one per cent change in capital intensity.[16] A positive (negative) $\beta$ coefficient thus shows that a country has a comparative advantage in capital

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[16] An alternative measure would involve relating exports to output in each country. In the absence of output figures, however, this measure could not be utilized in the present study. At any rate, it would require adjusting for country size (Balassa, 1968) while the measure used here does not require such an adjustment.

[16] Since the logarithm of zero is undefined, in the estimating equations, an export ratio of .001 has been used to represent cases when the exports of a country in a particular product category were nil. We have also experimented with the use of a 0.1 ratio and have obtained practically the same results. Nor are the results materially affected if we drop the zero observations from the regressions. This and other estimates not reported in the paper are available from the author on request.

(labour) intensive products while the numerical magnitude of the β coefficient indicates the extent of the country's comparative advantage in capital (labour) intensive commodities.[17] The estimated β coefficients are reported in Table 1.

In the regression equations utilizing the stock measure of (total) capital intensity, the β coefficient is statistically significant at the 5 per cent level for 22 countries and at the 10 per cent level for 26 countries. In turn, in regression equations utilizing the flow measure, the coefficient is significant at the 5 per cent level for 29 countries, with no additional countries included at the 10 per cent level. Note further that the β coefficients that have values near to zero have an economic interpretation even if they are not significantly different from zero; they indicate that a country is at the dividing line as far as comparative advantage in capital and labour-intensive products is concerned.

The β coefficients estimated by using the stock and the flow measures of capital intensity are highly correlated, with a Spearman rank correlation coefficient of .956. In turn, in estimates obtained by disaggregated capital into its physical and human capital components, a high degree of correspondence has been obtained in regard to the β coefficients pertaining to human capital intensity (Spearman rank correlation coefficient of .841) but not for physical capital intensity (Spearman rank correlation coefficient of .650). These differences are explained if we consider that human capital intensity was defined in a similar way under the stock and the flow measure of capital while this was not the case for physical capital intensity.

The level of statistical significance of the coefficients, too, is lower if we disaggregate capital into its physical and human capital components. The β coefficients are significant at the 5 (10) per cent confidence level in 14 (17) cases for the physical capital intensity variable and in 13 (17) cases for the human capital intensity variable if we use a stock measure of capital. The corresponding figures are 11 (15) for the physical capital intensity variable and 21 (24) for the human capital intensity variable under the flow measure.[18]

Next, we have tested the hypothesis that intercountry differences in the

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[17] Alternatively, use may be made of non-parametric tests involving the calculation of the Spearman rank correlation coefficient between the 'revealed' comparative advantage ratio and the individual factor intensity measures. This test has the disadvantage, however, that it cannot handle more than one explanatory variable and that it does not permit indicating the implications of the intercountry results for a country's future comparative advantage (on the last point, see the concluding section).

[18] The results contrast with those obtained by Helleiner who found total (physical and human) capital intensity to have lower explanatory power than skill intensity alone. But, Helleiner's results pertain to the trade of the LDCs taken as a whole; he did not employ a stock measure of capital; and he used the average wage as a measure of skill intensity (1976).

$\beta$ coefficients can be explained by differences in country characteristics that determine the pattern of comparative advantage. This test has been carried out by regressing the $\beta$ coefficients estimated for the individual countries on variables representing their physical and human capital endowments in an intercountry framework. (6) shows the estimating equation for the case when

$$\beta_j = f(\text{GDICAP}_j, \text{HMIND}_j) \tag{6}$$

per capita physical capital endowments (GDICAP) and human capital endowments (HMIND) are introduced simultaneously in the equation.[19]

In estimating equation (6) statistically significant results have been obtained for the physical as well as for the human capital endowment variables, regardless of whether the dependent variable originated in country regressions utilizing the stock or the flow measure of capital intensity. In both regressions, the physical as well as the human capital endowment variables are significant at the 5 per cent confidence level, while the coefficient of determination is .65 using the stock measure and .78 using the flow measure of capital intensity (equation 1.3 and 2.3 in Table 2).[20]

The level of statistical significance of the regression coefficients for the physical and human capital endowment variables is hardly affected if we introduce a dummy variable (DUMMY) representing the level of economic development. In turn, the dummy variable is not statistically significant if used in combination with either or both capital endowment variables, and its introduction does not increase the coefficient of determination.

We have also experimented with the ratio of professional, technical, and related workers to the total in the place of, and together with, the Harbison-Myers index. This variable (SKILLS) is not statistically significant at even the 10 per cent level. Nor does it appreciably affect the statistical significance of the other variables in the regression equation or raise the coefficient of determination. It can thus be rejected as an unsuitable substitute (complement) to the Harbison-Myers index.

It will be recalled that the level of statistical significance of the $\beta$

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Helleiner also used some additional variables, of which scale economies was statistically significant in trade between developing and developed countries (1976, p. 512). However, comparative advantage in products subject to scale economies is related to the size of the domestic market (Balassa, 1968) and, with developing countries having smaller markets, Helleiner's results raise problems of identification.

[19] Note that, with variations in the standard errors of the $\beta$ coefficients derived in equations (3) and (4), regression results obtained in equation (5) will be subject to heteroscedasticity which increases the standard error of the coefficients. However, the estimates are little affected if we weight the data for the individual countries by the inversion of the standard error of the $\beta$ coefficients to reduce heteroscedasticity.

[20] Regressing the rank correlation coefficients calculated as between the 'revealed' comparative advantage ratio and the factor intensity measures on factor endowment variables has generally confirmed the reported results, although the level of statistical significance of the coefficients was somewhat lower.

## TABLE 2

## INTERCOUNTRY REGRESSION EQUATIONS FOR THE TOTAL CAPITAL INTENSITY MEASURE

| Dependent Variable | Equation Number | Coefficient of Determination | Explanatory Variables | | | | |
|---|---|---|---|---|---|---|---|
| | | | GDICAP | HMIND | Dummy | Skills | Constant |
| $\beta_j^s$ | 1.1 | .61 | 1.90 (7.28) | | | | −1.17 ( −9.60) |
| | 1.2 | .46 | | .85 (5.35) | | | −1.38 ( −7.25) |
| | 1.3 | .65 | 1.46 (4.24) | .34 (1.92) | | | −1.37 ( −8.78) |
| | 1.4 | .61 | 1.66 (2.87) | | .16 ( .48) | | −1.16 ( −9.38) |
| | 1.5 | .59 | | .45 (2.37) | .69 (3.19) | | −1.30 ( −7.64) |
| | 1.6 | .65 | 1.39 (2.40) | 1.34 (1.83) | .05 ( .15) | | −1.36 ( −8.44) |
| | 1.7 | .62 | 1.63 (4.42) | | | .03 ( 1.06) | −1.41 ( −5.51) |
| | 1.8 | .62 | 1.40 (2.23) | | .15 ( .45) | .03 ( 1.04) | −1.40 ( −5.39) |
| | 1.9 | .66 | 1.27 (3.09) | .32 (1.78) | | .02 ( .85) | −1.54 ( −5.96) |
| | 1.10 | .66 | 1.20 (1.93) | .31 (1.70) | .05 ( .15) | .02 ( .84) | −1.54( −5.80) |
| $\beta_j^f$ | 2.1 | .71 | 3.59 (9.12) | | | | −2.27 (−12.43) |
| | 2.2 | .58 | | 1.67 (6.84) | | | −2.74 ( −9.39) |
| | 2.3 | .78 | 2.57 (5.37) | .77 (3.12) | | | −2.72 (−12.54) |
| | 2.4 | .72 | 2.72 (3.19) | | .57 (1.14) | | −2.25 (−12.29) |
| | 2.5 | .73 | | .91 (3.42) | 1.30 (4.30) | | −2.60 (−10.83) |
| | 2.6 | .78 | 2.11 (2.66) | .74 (2.91) | .33 ( .71) | | −2.69 (−12.05) |
| | 2.7 | .71 | 3.45 (6.14) | | | .02 ( .34) | −2.39 (− 6.13) |
| | 2.8 | .72 | 2.60 (2.76) | | .57 (1.12) | .01 ( .32) | −2.36 (− 6.05) |
| | 2.9 | .78 | 2.50 (4.46) | .77 (3.05) | | −.001 (−.03) | −2.71 (− 7.44) |
| | 2.10 | .78 | 2.12 (2.45) | .74 (2.84) | .32 ( .70) | −.001 (−.03) | −2.68 (− 7.24) |

Note: For explanation of symbols, see Table 1. In the estimating equations, GDICAP has been expressed in units of 10,000 dollars and HMIND in units of 100.

coefficients for the physical capital intensity variable in the country regressions has been generally low. Statistically poor results have been obtained also in regressing these coefficients on variables representing physical and human capital endowment in an intercountry framework as in (6). The explanatory power of the regressions is low as is the level of statistical significance of the coefficients in cases when the physical and the human capital endowment variables are introduced simultaneously in the estimating equations. However, the coefficients are statistically significant when these variables are introduced separately (Table 3).

## TABLE 3

### REGRESSION EQUATIONS FOR PHYSICAL AND HUMAN CAPITAL INTENSITY MEASURES

| Dependent variable | Equation number | Coefficient of determination | Explanatory variables | | | |
|---|---|---|---|---|---|---|
| | | | GDICAP | HMIND | DUMMY | CONSTANT |
| $\beta_j^{sp}$ | 3.1 | .17 | | .32(2.64) | | −.56(−3.81) |
| | 3.2 | .19 | .67(2.86) | | | —.46(−4.22) |
| | 3.3 | .22 | .45(1.42) | .16(1.00) | | −.55(−3.83) |
| | 3.4 | .22 | .55(1.03) | .17(1.01) | −.07(−.23) | −.56(−3.75) |
| $\beta_j^{fp}$ | 4.1 | .23 | | .37(3.16) | | −.65(−4.66) |
| | 4.2 | .25 | .75(3.39) | | | −.53(−5.17) |
| | 4.3 | .29 | .50(1.67) | .19(1.24) | | −.64(−4.74) |
| | 4.4 | .30 | .21( .43) | .17(1.08) | .21(.72) | —.62(−4.46) |
| $\beta_j^{sh}$ | 5.1 | .40 | | .55(4.74) | | −.87(−6.23) |
| | 5·2 | .59 | 1.30(6.99) | | | −.75(−8.73) |
| | 5.3 | .61 | 1.07(4.27) | .17(1.36) | | −.86(−7.55) |
| | 5.4 | .62 | .81(1.95) | .16(1.18) | .19(.78) | −.84(−7.19) |
| $\beta_j^{fh}$ | 6.1 | .50 | | 2.45(5.87) | | −3.91(−7.81) |
| | 6.2 | .64 | 5.36(7.77) | | | −3.25(−10.13) |
| | 6.3 | .69 | 3.96(4.96) | 1.07(2.33) | | −3.87(−9.65) |
| | 6.4 | .69 | 3.83(2.58) | 1.06(2.24) | .09(.10) | −3.86(−9.29) |

Note: For explanation of symbols, see Tables 1 and 2.

The explanatory power of the regressions is relatively high in cases when the $\beta$ coefficients obtained in regard to the flow measure of human capital intensity are used as the dependent variable in equation (6). Also, both the physical and the human capital endowment variables are highly significant when introduced simultaneously in the equations. The level of significance is lower in cases when the stock measure of capital intensity is employed instead of the flow measure.

## IV

We have further examined deviations from the relationships estimated in an intercountry context. Upward deviations from the regression line are shown with respect to the physical capital endowment, but not with regard to the human capital endowment, of Argentina and the United States. The results indicate that the actual capital intensity of the exports of these countries much exceeded expected values based on their physical and human capital endowments.

The results for Argentina are explained if we consider that, during the period under study, this country represented an extreme case among the developing countries as far as distortions due to the application of protective measures are concerned. These distortions, in turn, have affected the pattern of exports and imports; in particular, with the implicit subsidy to capital goods through the overvaluation of the exchange rate associated with high protection, exports have been biased in a capital-intensive direction.

The results for the United States are somewhat of a puzzle as the findings of other authors would have led us to expect that actual U.S. exports are less, rather than more, physical-capital intensive than the hypothetical exports derived from intercountry relationships. And while the solution to the puzzle may well be that the ratio of physical to human capital intensity is even higher for the imports than for the exports of the United States, our results conflict with those of Hufbauer which show the U.S. to be below the regression line (1970, p. 169). Note, however, that Hufbauer's results pertain to in earlier year and he provides evidence that U.S. exports have become increasingly physical-capital intensive over time. Finally, our calculations using direct input coefficients are preferable to earlier estimates derived by the use of direct plus indirect coefficients once we admit international trade in intermediate products.

In turn, the exports of Hong Kong are less capital-intensive than expected on the basis of its physical capital endowment. It would appear that Hong Kong's export structure does not yet fully reflect the large investments in physical capital carried out during the period under consideration. Finally, deviations from the regression line are relatively small in regard to human capital endowment.

Next we have estimated a matrix of Spearman rank correlation coefficients for pairs of country characteristics in the 36 country sample. From Table 4 it is apparent that the extent of the correlation is the weakest in regard to the skill ratio, reinforcing our conclusion as to the inappropriateness of this variable.

In turn, the correlations between per capita GNP on the one hand, and per capita GDI and the Harbison-Myers index on the other, indicate the effects of investment in physical and in human capital on incomes per head. The existence of this correlation also explains that the inclusion of all three variables in the regression equation raises the standard error of the coefficients to a considerable extent.[21] Nevertheless, the fact that the level of statistical significance of the physical and human capital endowment variables much exceeds that for incomes per head may be taken as an indication of the "primacy" of the former.

TABLE 4

SPEARMAN RANK CORRELATION COEFFICIENTS FOR COUNTRY CHARACTERISTICS IN THE 36 COUNTRY SAMPLE

| | GNPCAP | GDICAP | HMIND | SKILLS |
|---|---|---|---|---|
| GNPCAP | 1.000 | .984 | .754 | .674 |
| GDICAP | .984 | 1.000 | .730 | .697 |
| HMIND | .754 | .730 | 1.000 | .660 |
| SKILLS | .674 | .697 | .660 | 1.000 |

For explanation of symbols, see Table 1. All coefficients are statistically significant at the 1 per cent level.

We have seen that the intercountry regressions provide the same general results, irrespective of whether we use a stock or a flow measure of capital intensity. This finding may be explained by the relatively high degree of correspondence in the ranking of the product categories by the two measures of capital intensity that is shown by the estimated Spearman rank correlation coefficient of .782[22] (Table 5).

The rankings of the 18 two-digit industry groups, too, are rather similar under the two measures of capital intensity. Among the individual industry groups, Apparel and other textile products, Leather and leather products and Stone, clay and glass products are relatively labour intensive while Petroleum and coal products, Chemical, and Paper and paper products are relatively capital intensive (Table 6). At the same time, the results vary to a considerable extent within each industry group. For example, fur goods are very capital intensive although they belong to the highly labour-intensive Apparel and other textile products industry group. In turn explo-

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[21] The relevant regression results with *t*-values in parentheses are

$$\beta^{s}_{j} = \underset{(8.46)}{-1.36} + \underset{(.06)}{.14}\ \text{GNPCAP} + \underset{(1.20)}{1.39}\ \text{GDICAP} + \underset{(1.52)}{.33}\ \text{HMIND}\quad R^2 = .65$$

$$\beta^{f}_{j} = \underset{(12.06)}{-2.70} + \underset{(.51)}{1.66}\ \text{GNPCAP} + \underset{(1.11)}{1.79}\ \text{GDICAP} + \underset{(2.25)}{.68}\ \text{HMIND}\quad R^2 = .78$$

[22] Some major exceptions are various textile fabrics, reclaimed rubber, aluminium castings, ball bearings, and railroad cars where the stock measure, and toilet articles, paints, electric housewares, electric lamps, and motor vehicles where the flow measure, shows a considerably higher degree of capital intensity than the other measure of capital intensity.

## TABLE 5

## SPEARMAN RANK CORRELATION COEFFICIENTS FOR ALTERNATIVE MEASURES OF CAPITAL INTENSITY

| | (PC + HC)/L | VA/L | PC/L | HC/L | (VA – W)/L | W/L |
|---|---|---|---|---|---|---|
| (PC + HC)/L | 1.000 | .782 | .758 | .907 | .680 | .835 |
| VA/L | .782 | 1.000 | .636 | .685 | .951 | .809 |
| PC/L | .758 | .636 | 1.000 | .488 | .604 | .562 |
| HC/L | .907 | .685 | .488 | 1.000 | .565 | .839 |
| (VA – W)/L | .680 | .951 | .604 | .565 | 1.000 | .631 |
| W/L | .835 | .809 | .562 | .839 | .631 | 1.000 |

For explanation of symbols see Table 1.
All coefficients are statistically significant at the 1 per cent level.

sives are relatively labour intensive although they belong to the capital-intensive chemicals industry group.

Moreover, substantial differences are observed among individual product categories in terms of their factor intensity. At one extreme, we find woollen yarn and thread with (total) capital per worker of $3215, followed by earthenware food utensils ($3520), footwear ($3757), leather bags and gloves ($5483), vitreous china food utensils ($7221) costume jewellery ($ 8589). and games and toys ($8654), which are the most labour intensive among the 184 product categories. At the other end of spectrum, petroleum products ($191739), wood pulp ($135474), organic chemicals ($124198), synthetic rubber ($120631), carbon black ($101161), inorganic chemicals ($92762), and paper ($89089) are the most capital intensive (Appendix Table 1)[23].

There is less of a correspondence in the rankings of product categories by their physical and their human capital intensity. The Spearman rank correlation coefficient between these indicators is .488 under the stock measure of capital and .631 under the flow measure. In turn, the correlation coefficient is .604 between the two measures of physical capital intensity. These differences are explained by the fact that the flow measure of capital intensity is sensitive to inter-industry differences in profits that do not affect the stock measure whereas both measures of human capital intensity are effected by average wages in the various product categories.

Among the individual product categories, organic chemicals, cellulosic man-made fibres, dyeing and tanning extracts, fertilizers, carbon black, and petroleum refining and products have relatively high physical as against human capital intensity, regardless of whether we use the stock

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[23] The results obtained by the use of the flow measure of capital intensity are broadly comparable, although they differ in regard to particular commodities.

## TABLE 6
## AVERAGE FACTOR INTENSITIES FOR 18 AGGREGATED PRODUCT CATEGORIES (DOLLARS)

| No. | Sig. No. | Product Categories | Weight | $p_i^s$ | $h_i^s$ | $k_i^s$ | $p_i^f$ | $h_i^f$ | $k_i^f$ | $p_i^s/h_i^s$ | $p_i^f/h_i^f$ | $w_i^u$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | 22. | Textile Mill Products | 75.38 | 9404 | 17814 | 27219 | 3885 | 5919 | 9804 | .528 | .656 | 4222 |
| 2. | 23. | Apparel + Paper Textile Products | 22.98 | 2024 | 11967 | 13991 | 3583 | 5165 | 8748 | .169 | .694 | 3968 |
| 3. | 24. | Lumber + Ore Products | 31.75 | 11264 | 12184 | 23449 | 4452 | 6431 | 10883 | .925 | .692 | 5213 |
| 4. | 25. | Furniture + Fixture | 9.80 | 4520 | 21678 | 26198 | 4431 | 6669 | 11100 | .209 | .664 | 4505 |
| 5. | 26. | Paper + Allied Products | 43.30 | 57609 | 40126 | 97735 | 11467 | 10397 | 21864 | 1.436 | 1.103 | 6382 |
| 6. | 27. | Printing + Publishing | 13.54 | 8417 | 36191 | 44607 | 8962 | 8941 | 17903 | .233 | 1.002 | 5323 |
| 7. | 28. | Chemical + Allied Products | 117.73 | 41417 | 33031 | 74448 | 19485 | 9882 | 29367 | 1.254 | 1.972 | 6580 |
| 8. | 29. | Petroleum + Coal Products | 24.45 | 126110 | 65629 | 191739 | 31310 | 11910 | 43220 | 1.922 | 2.629 | 5342 |
| 9. | 30. | Rubber + Plastic Products | 24.11 | 10188 | 18579 | 28766 | 6406 | 7784 | 14190 | .549 | .823 | 5922 |
| 10. | 31. | Leather + Leather Products | 7.75 | 5860 | 17281 | 23142 | 4420 | 6824 | 11244 | .339 | .648 | 5096 |
| 11. | 32. | Stone, Clay + Glass Product | 13.96 | 11843 | 10003 | 21846 | 5571 | 6742 | 12313 | 1.184 | .826 | 6082 |
| 12. | 33. | Primary Metal + Allied Products | 99.91 | 32937 | 30130 | 63066 | 6774 | 10385 | 17159 | 0.093 | .652 | 7373 |
| 13. | 34. | Fabricated Metal Products | 16.99 | 9073 | 27860 | 36933 | 7330 | 8715 | 16045 | .326 | .841 | 5927 |
| 14. | 35. | Nonelectrical Machinery | 148.36 | 10045 | 29011 | 39056 | 7326 | 9704 | 17030 | .344 | .755 | 6831 |
| 15. | 36. | Electrical Equipment + Supplies | 96.98 | 7122 | 30836 | 37958 | 5808 | 8916 | 14724 | .231 | .651 | 5834 |
| 16. | 37. | Transportation Equipment | 190.14 | 11602 | 27067 | 38669 | 11090 | 10824 | 21914 | .429 | 1.024 | 8114 |
| 17. | 38. | Instruments + Related Products | 28.34 | 11147 | 41230 | 52376 | 13530 | 9619 | 23150 | .270 | 1.407 | 5495 |
| 18. | 39. | Misc. Manufactured Products | 24.71 | 5667 | 17761 | 23428 | 6228 | 9319 | 15547 | .319 | .668 | 5436 |
|  |  | All Categories | 1000.00 | 20518 | 28578 | 48796 | 9645 | 9308 | 18953 | .701 | 1.036 | 5831 |

Note: The table shows average capital labour ratios in a two-digit industry breakdown. The average capital-labour ratios for the individual product categories have been derived by weighting by the share of exports of the product category concerned in the total exports for all the 184 categories aggregated over the 36 countries. For explanation of the definitions and symbols used, see equation (1) to (3) in the text.

or the flow measure of capital. The opposite result has been obtained for canvas products, ratio and TV equipment, aircraft, ships and boats, and scientific instruments and control equipment. The first group includes product categories where the ratio of physical to human capital was between 1.5 and 5 using the stock measure of capital intensity and exceeded 1.2 using the flow measure. In turn, product categories in the second group had a ratio of physical to human capital of between .1 and .2 under the stock measure of capital and less than .6 under the flow measure (Appendix Table 1).

## Summary and Conclusions

This paper has investigated the changing pattern of comparative advantage in the process of economic development. Comparative advantage has been defined in terms of relative export performance, thus neglecting the composition of imports which is greatly affected by the structure of protection.

For each country, export performance has been related to the capital intensity of the individual product categories, using a stock as well as a flow measure of capital, with further distinction made between physical and human capital. Next, the intercountry differences in the regression coefficients thus obtained have been correlated with country characteristics, such as physical and human capital endowment and the level of economic development.

The empirical estimates show that intercountry differences in the structure of exports are in a large part explained by differences in physical and human capital endowments. The results lend support to the 'stages' approach to comparative advantage according to which the structure of exports changes with the accumulation of physical and human capital.[24] This approch is also supported by intertemporal comparisons for Japan, which indicate that Japanese exports have become increasingly physical capital and human capital intensive over time (Heller 1976).

These findings have important policy implications for the developing countries. To begin with, they warn against distorting the system of incentives in favour of products in which the country has a comparative disadvantage. The large differences shown among product categories in terms of their capital intensity point to the fact that there is a substantial penalty for such distortions in the form of the misallocation of productive factors. Possible magnitudes of the economic cost of distortions are indicated

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[24] The expression 'stages' is used here to denote changes over time that occur more-or-less continuously rather than to discrete, stepwise changes. It is thus unrelated to economic stages described by Marx, the exponents of the German historical school, and Rostow.

[25] In 1974, average wages in manufacturing in Korea were 9 per cent, and in the Phillippines 6 per cent, of U.S. wages (ILO, *Year Book of Labour Statistics*).

### TABLE 7
### HYPOTHETICAL PRODUCTION COSTS CALCULATED UNDER ALTERNATIVE ASSUMPTIONS

(U. S. Dollars)

| Product Category | United States | | | | Developing Country | | | | Ratio of Total Costs |
|---|---|---|---|---|---|---|---|---|---|
| | Physical Capital | Human Capital | Unskilled Labour | Total Costs | Physical Capital | Human Capital | Unskilled Labour | Total Costs | |
| *Capital-Intensive* | | | | | | | | | |
| 1. Petroleum refining & products | 37833 | 6583 | 5342 | 49738 | 54215 | 9405 | 1781 | 65401 | 1.315 |
| 2. Wood pulp | 26400 | 4747 | 6382 | 37529 | 37831 | 6802 | 2127 | 46760 | 1.246 |
| 3. Organic chemicals | 22635 | 4875 | 6632 | 34142 | 32436 | 6986 | 2211 | 41633 | 1.219 |
| 4. Synthetic rubber | 20826 | 5121 | 6632 | 32579 | 29844 | 7338 | 2211 | 39393 | 1.209 |
| 5. Carbon black | 18669 | 3893 | 6632 | 29194 | 26753 | 5579 | 2211 | 34543 | 1.183 |
| 6. Inorganic chemicals | 16044 | 3928 | 6632 | 26604 | 22991 | 5629 | 2211 | 30831 | 1.159 |
| 7. Paper | 14778 | 3983 | 6383 | 25143 | 21177 | 5707 | 2127 | 29011 | 1.154 |
| *Labour-Intensive* | | | | | | | | | |
| 8. Games & toys | 1521 | 359 | 5436 | 7316 | 2180 | 514 | 1812 | 4506 | .616 |
| 9. Vitreous china food utensils | 1608 | 186 | 6082 | 7876 | 2304 | 267 | 2027 | 4598 | .584 |
| 10. Costume jewelry | 978 | 533 | 5436 | 6947 | 1401 | 764 | 1812 | 3977 | .572 |
| 11. Leather bags & purses | 711 | 311 | 5096 | 6118 | 1019 | 446 | 1699 | 3164 | .517 |
| 12. Earthenware food utensils | 1056 | 0 | 6082 | 7138 | 1513 | 0 | 2027 | 3540 | .496 |
| 13. Woollen yarn & thread | 486 | 160 | 4228 | 4874 | 696 | 229 | 1409 | 2334 | .479 |
| 14. Footwear | 660 | 156 | 5450 | 6266 | 946 | 224 | 1817 | 2987 | .477 |
| *All Categories* | *6155* | *2828* | *5831* | *14815* | *8818* | *4052* | *1944* | *14815* | *1.000* |

Note: U.S. production costs have been calculated by adding 30 per cent of the gross value of physical capital, assumed to reflect pre-tax earnings and depreciation, to observed labour costs. In turn, for the hypothetical developing country *it has been assumed that* unskilled wages are one-third of U.S. wages and the cost of capital is *correspondingly higher. The latter has been estimated to* exceed U.S. costs by 43.3 per cent under *the assumption that value added in the entire manufacturing sector is the same in the two* cases. All data are expressed per worker.

in Table 7. This provides comparisons between production costs in the United States, assuming that pre-tax returns and depreciation amount to 30 per cent of the gross value of physical capital, and production costs in a hypothetical developing country where unskilled wages are one-third of U.S. wages[25] and the cost of capital is commensurately higher.[26] In the latter country, the estimated cost of capital-intensive products is 15 to 32 per cent higher, and that of labour intensive products 38 to 52 per cent lower, than in the United States, so that differences in relative costs between capital and labour-intensive products range from 1.87 to 2.76.[27]

The economic cost of policy-distortions may be especially high in countries that bias the system of incentives in favour of import substitution in capital-intensive industries and against exports in labour-intensive industries. Costs will also be incurred if capital-intensive exports are artificially promoted.

The results can further be utilized to gauge the direction in which a country's comparative advantage is moving. For this purpose, use may be made of the regression estimates obtained as regards total capital intensity. As a first step, we substitute projected future values of a country's physical and human capital endowments in the intercountry regressions, so as to estimate the prospective values of the $\beta$ coefficients.[28] Next, we derive the hypothetical structure of exports corresponding to the estimated $\beta$ coefficients, which are taken to reflect the country's future physical and human capital endowments. Comparing the projected export structure with the actual structure of exports, one can then indicate prospective changes in export flows.

The regression estimates obtained in regard to physical and human capital intensity can also be used in the manner described above so as to indicate the relative importance of physical and human capital intensive products in a country's future export structure. Given the poor statistical results of the regressions for physical capital intensity, however, one should utilize directly the data reported in Appendix I which show the physical and the human capital intensity of individual product categories.

The stages approach to comparative advantage also permits one to dispel certain misapprehensions as regards the foreign demand constraint under which developing countries are said to operate. With countries progressing on the comparative advantage scale, their exports can supplant the exports of countries that graduate to a higher level. Now, to the extent that one developing country replaces another in the imports of particular commodities by the developed countries, the problem of adjustment in the latter group of countries does not arise. Rather, the brunt of adjustment will be borne in industries where the products of newly graduating developing countries compete with the products of the developed countries.

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[26] The difference in the cost of capital has been estimated at 43.3 per cent under the assumption that value added in the manufacturing sector was the same in the two cases. It has further been assumed that the absolute difference between skilled and unskilled wages remained the same.

[27] As elsewhere in the paper, the calculations do not allow for factor substitution in response of intercountry differences in factor prices.

[28] In line with the stages approach to comparative advantage, this is done on the assumption that new countries exporting manufactured goods will enter at the lower end of the spectrum.

A case in point is Japan whose comparative advantage has shifted towards highly capital-intensive exports. In turn, developing countries with a relatively high human capital endowment, such as Korea and Taiwan, can take Japan's place in exporting relatively human capital-intensive products, and countries with a relatively high physical capital endowment, such as Brazil and Mexico, can take Japan's place in exporting relatively physical capital-intensive products. Finally, countries at lower levels of development can supplant the middle-level countries in exporting unskilled labour-intensive commodities.

The prospects of economic growth through exports thus appear much brighter once we understand the character of the changing pattern of comparative advantage. Further work on the experience of individual countries over time would be necessary, however, in order to study this process in more depth.

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## APPENDIX TABLE 1
## SECTORAL CHARACTERISTICS FOR 184 PRODUCT CATEGORIES (IN DOLLARS)

| Sector | Product Category | $p_i^s$ | $h_i^s$ | $k_i^s$ | $p_i^f$ | $h_i^f$ | $k_i^f$ | $p_i^s/h_i^s$ | $p_i^f/h_i^f$ |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Cotton Fabrics (Grey) | 11770 | 15906 | 27676 | 2871 | 5819 | 8690 | .740 | .493 |
| 2. | Synthetic Fabrics | 11690 | 22165 | 33855 | 3734 | 6446 | 10180 | .527 | .579 |
| 3. | Woollen Fabrics | 9490 | 20229 | 29719 | 3792 | 6248 | 10040 | .469 | .607 |
| 4. | Narrow Fabrics | 6820 | 15092 | 21912 | 3778 | 5742 | 9520 | .452 | .658 |
| 5. | Hosiery + Knit Fabrics | 6930 | 10406 | 17336 | 4501 | 5269 | 9770 | .666 | .854 |
| 6. | Knit Outerwear | 4410 | 12826 | 17236 | 2609 | 5511 | 8120 | .344 | .473 |
| 7. | Knit Underwear | 4330 | 6864 | 11194 | 2083 | 4917 | 7000 | .631 | .424 |
| 8. | Cotton Fabrics (Finished) | 13170 | 23804 | 36974 | 3349 | 6611 | 9960 | .553 | .507 |
| 9. | Woven Carpets + Rugs | 11550 | 23188 | 34738 | 4995 | 6545 | 11540 | .498 | .763 |
| 10. | Nonwoven Carpets + Rugs | 10400 | 24937 | 35337 | 9569 | 6721 | 16290 | .417 | 1.424 |
| 11. | Yarn + Thread, Except Wool | 11710 | 11396 | 23106 | 3652 | 5368 | 9020 | 1.028 | .680 |
| 12. | Woollen Yarn + Thread | 1620 | 1595 | 3215 | 799 | 1221 | 2020 | 1.016 | .654 |
| 13. | Felt Goods | 13280 | 38588 | 51868 | 6985 | 8085 | 15070 | .344 | .864 |
| 14. | Lace + Embroidery | 4530 | 28545 | 33075 | 4853 | 6787 | 11640 | .159 | .715 |
| 15. | Textile Paddings | 9460 | 24145 | 33605 | 6336 | 6644 | 12980 | .392 | .954 |
| 16. | Combed Fibers + Processed Textile Waste | 9240 | 14905 | 24145 | 4080 | 5720 | 9800 | .620 | .713 |
| 17. | Nonrubberized Coated Fabrics | 12370 | 44198 | 56568 | 7024 | 8646 | 15670 | .280 | .812 |
| 18. | Cordage + Twine | 9100 | 19327 | 28427 | 4880 | 6160 | 11040 | .471 | .792 |
| 19. | Textile Goods Nes | 11640 | 29568 | 41208 | 7247 | 7183 | 14430 | .394 | 1.009 |

APPENDIX TABLE I (Cont.)

| Sector | Product Category | $p_i$ | $h_i^s$ | $k_i^s$ | $p_i^f$ | $h_i^f$ | $k_i^f$ | $p_i^s/h_i^s$ | $p_i^f/h_i^f$ |
|---|---|---|---|---|---|---|---|---|---|
| 20. | Mens and Boys Outer Apparel | 1680 | 9450 | 11130 | 3181 | 4869 | 8050 | .178 | .653 |
| 21. | Nonknit Underwear | 1920 | 7320 | 9240 | 3042 | 4648 | 7690 | .262 | .655 |
| 22. | Ties, Corsets + Gloves | 1990 | 15577 | 17567 | 4324 | 5476 | 9800 | .128 | .790 |
| 23. | Womens and Childrens Clothing | 2070 | 12453 | 14523 | 3383 | 5167 | 8550 | .166 | .655 |
| 24. | Hats + Caps | 2050 | 11217 | 13267 | 3405 | 5045 | 8450 | .183 | .675 |
| 25. | Fur Goods | 5320 | 46677 | 51997 | 11051 | 8589 | 19640 | .114 | 1.287 |
| 26. | Leather Clothing | 1860 | 7783 | 9643 | 2739 | 5211 | 7950 | .239 | .526 |
| 27. | Curtains + Draperies | 3220 | 12276 | 15496 | 3605 | 5145 | 8750 | .262 | .701 |
| 28. | Textile Bags + Sacks | 5810 | 11581 | 17391 | 3592 | 5078 | 8670 | .502 | .707 |
| 29. | Canvas Products | 2410 | 19684 | 22094 | 3306 | 5884 | 9190 | .122 | .562 |
| 30. | Preserved Wood | 11820 | 8618 | 20438 | 5618 | 6072 | 11690 | 1.372 | .925 |
| 31. | Sawmill Products | 10940 | 10586 | 21526 | 4058 | 6272 | 10330 | 1.033 | .647 |
| 32. | Prefabricated Wood | 5990 | 22740 | 28730 | 4596 | 7484 | 12080 | .263 | .614 |
| 33. | Veneer + Plywood | 11850 | 21362 | 33212 | 4370 | 7350 | 11720 | .555 | .594 |
| 34. | Wooden Boxes + Crates | 5570 | 3358 | 8928 | 4131 | 5549 | 9680 | 1.659 | .744 |
| 35. | Cooperage Products | 7880 | 15868 | 23748 | 3935 | 6805 | 10740 | .497 | .578 |
| 36. | Wood Products Nes | 9450 | 8952 | 18402 | 4925 | 6105 | 11030 | 1.056 | .807 |
| 37. | Furniture + Fixtures | 4520 | 21678 | 26198 | 4431 | 6669 | 11100 | .209 | .664 |
| 38. | Wood Pulp | 88000 | 47474 | 135474 | 16028 | 11132 | 27160 | 1.854 | 1.440 |
| 39. | Paper, Except for Construction | 49260 | 39829 | 89089 | 8651 | 10369 | 19020 | 1.237 | .834 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 40. *Paperboard* | 42830 | 35581 | 78411 | 13657 | 9943 | 23600 | 1.204 | 1.373 |
| 41. *Stationary* | 8460 | 20604 | 29064 | 6941 | 7869 | 14810 | .411 | .882 |
| 42. Paper Bags + Containers | 11950 | 16255 | 28205 | 5366 | 8004 | 13370 | .735 | .670 |
| 43. Paper Products Nes | 16340 | 22431 | 38771 | 13600 | 8620 | 22220 | .728 | 1.578 |
| 44. Building Paper + Paper Products | 30400 | 27341 | 57741 | 8656 | 9114 | 17770 | 1.112 | .950 |
| 45. Newspapers + Periodicals | 8490 | 34984 | 43474 | 7946 | 8494 | 16440 | .243 | .935 |
| 46. Books | 7820 | 38557 | 46377 | 12964 | 8856 | 21820 | .203 | 1.464 |
| 47. Miscellaneous Publishing | 8780 | 36563 | 45343 | 5313 | 8647 | 13960 | .240 | .614 |
| 48. Engineering + Printing | 8870 | 33713 | 42583 | 7047 | 9513 | 16560 | .263 | .741 |
| 49. Inorganic Chemicals | 53480 | 39282 | 92762 | 19675 | 10556 | 30230 | 1.361 | 1.864 |
| 50. Organic Chemicals | 75450 | 48748 | 124198 | 25581 | 11509 | 37090 | 1.548 | 2.223 |
| 51. Plastic Materials + Products | 17790 | 14789 | 32579 | 8559 | 7911 | 16470 | 1.203 | 1.082 |
| 52. Synthetic Rubber | 69420 | 51211 | 120631 | 26251 | 11759 | 38010 | 1.356 | 2.233 |
| 53. Cellulosic Manmade Fibres | 34300 | 8002 | 42302 | 8746 | 7434 | 16180 | 4.287 | 1.176 |
| 54. Synthetic Fibres | 40820 | 28863 | 69683 | 13757 | 9523 | 23280 | 1.414 | 1.445 |
| 55. Biological + Medicinal products | 17670 | 42256 | 59926 | 28068 | 10862 | 38930 | .418 | 2.584 |
| 56. Soap + Cleaners | 18830 | 30622 | 49452 | 34207 | 9693 | 43900 | .615 | 3.529 |
| 57. Toilet preparations | 8770 | 17967 | 26737 | 39617 | 8433 | 48050 | .488 | 4.698 |
| 58. Paints | 11650 | 26604 | 38254 | 12644 | 9296 | 21940 | .438 | 1.360 |
| 59. Dyeing + Tanning Extracts | 27530 | 9239 | 36769 | 12141 | 7559 | 19700 | 2.980 | 1.606 |
| 60. Fertilisers | 39710 | 10748 | 50458 | 11543 | 7707 | 19250 | 3.694 | 1.498 |
| 61. Misc. Agricultural Chemicals | 30560 | 24698 | 55258 | 29967 | 9103 | 39070 | 1.237 | 3.292 |
| 62. Adhesives + Gelatin | 18500 | 34856 | 53356 | 14986 | 10124 | 25110 | .531 | 1.480 |

## APPENDIX TABLE 1 (Cont)

| Sector | Product Category | $p^s_i$ | $h^s_i$ | $k^s_i$ | $p^f_i$ | $h^f_i$ | $k^f_i$ | $p^s_i/h^s_i$ | $p^f_i/h^f_i$ |
|---|---|---|---|---|---|---|---|---|---|
| 63. | Explosives | 6760 | 26423 | 33183 | 1887 | 9273 | 11160 | .256 | .204 |
| 64. | Printing Ink | 10810 | 29033 | 39843 | 8726 | 9534 | 18260 | .372 | .915 |
| 65. | Carbon Black | 62230 | 38931 | 101161 | 30489 | 10521 | 41010 | 1.598 | 2.898 |
| 66. | Misc. Chemical Preparations | 17820 | 26071 | 43891 | 17251 | 9239 | 26490 | .684 | 1.867 |
| 67. | Petroleum Refining + Products | 126110 | 65629 | 191739 | 31310 | 11910 | 43220 | 1.922 | 2.629 |
| 68. | Asbestos + Asphalt Products | 19810 | 43088 | 62898 | 11119 | 9651 | 20770 | .460 | 1.152 |
| 69. | Tires + Tubes | 23050 | 45124 | 68174 | 11792 | 10958 | 22750 | .511 | 1.076 |
| 70. | Footwear | 2200 | 1557 | 3757 | 3360 | 5611 | 8970 | 1.413 | .599 |
| 71. | Reclaimed Rubber | 21620 | 22534 | 44154 | 4059 | 8691 | 12750 | .959 | .467 |
| 72. | Misc. Rubber Products | 10280 | 20621 | 30901 | 5413 | 8507 | 13920 | .499 | .636 |
| 73. | Leather | 7470 | 23815 | 31285 | 4840 | 7480 | 12320 | .314 | .647 |
| 74. | Industrial Leather Belting | 5130 | 25564 | 30694 | 6324 | 7656 | 13980 | .201 | .826 |
| 75. | Leather Uppers | 3250 | 8041 | 11291 | 4144 | 5896 | 10040 | .404 | .703 |
| 76. | Leather Bags + Purses | 2370 | 3113 | 5483 | 3509 | 5401 | 8910 | .761 | .650 |
| 77. | Misc. Leather Goods | 2890 | 7623 | 10513 | 2567 | 5863 | 8430 | .379 | .438 |
| 78. | Flat Glass | 35560 | 49700 | 85260 | 12076 | 11054 | 23130 | .715 | 1.092 |
| 79. | Glass Containers | 9980 | 7366 | 17346 | 5710 | 6260 | 11970 | 1.355 | .912 |
| 80. | Cement + Concrete | 41110 | 31110 | 72220 | 11447 | 9193 | 20640 | 1.321 | 1.245 |
| 81. | Brick + Structural Clay Tiles | 14700 | 8708 | 23408 | 4252 | 6948 | 11200 | 1.688 | .612 |
| 82. | Refractories | 22060 | 30907 | 52967 | 8609 | 9171 | 17780 | .714 | .939 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 83. *Vitreous Plumbing Fixtures* | 11810 | 24748 | 36558 | 7498 | 8562 | 16060 | .477 | .876 |
| 84. *Vitreous China Food Utensils* | 5360 | 1861 | 7221 | 3390 | 6260 | 9650 | 2.880 | .541 |
| 85. *Earthenware Food Utensils* | 3520 | 0 | 3520 | 764 | 5606 | 6370 | R | .136 |
| 86. *Porcelain Products* | 9620 | 11122 | 20742 | 3743 | 7197 | 10940 | .865 | .520 |
| 87. Concrete + Brick Products | 11980 | 20101 | 32081 | 6702 | 8088 | 14790 | .596 | .829 |
| 88. Lime | 46700 | 28313 | 75013 | 8969 | 8911 | 17880 | 1.649 | 1.006 |
| 89. Gypsum Products | 49070 | 33163 | 82233 | 12184 | 9396 | 21580 | 1.480 | 1.297 |
| 90. Cut Stone Products | 7100 | 7783 | 14883 | 3072 | 6858 | 9930 | .912 | .448 |
| 91. Abrasive Products | 15580 | 29249 | 44829 | 8467 | 9013 | 17480 | .533 | .939 |
| 92. Asbestos Products | 13320 | 23891 | 37211 | 6199 | 8471 | 14670 | .558 | .732 |
| 93. Mineral Wool | 21330 | 32757 | 54087 | 11098 | 9362 | 20460 | .651 | 1.185 |
| 94. Misc. Nonmetallic Mineral Products | 12330 | 22278 | 34608 | 4827 | 8313 | 13140 | .553 | .581 |
| 95. Steel + Steel Products | 37850 | 31089 | 68939 | 6729 | 10631 | 17360 | 1.217 | .633 |
| 96. Iron Foundries | 11460 | 23994 | 35454 | 4569 | 9511 | 14080 | .478 | .480 |
| 97. Steel Foundries | 11440 | 14716 | 26156 | 4112 | 9208 | 13320 | .777 | .447 |
| 98. Wrought Copper | 23400 | 30342 | 53742 | 8544 | 10036 | 18580 | .771 | .851 |
| 99. Wrought Aluminium | 32930 | 30085 | 63015 | 5647 | 10013 | 15660 | 1.095 | .564 |
| 100. Nonferrous Metals Nes | 19760 | 25371 | 45131 | 9154 | 9546 | 18700 | .779 | .959 |
| 101. Aluminium Castings + Stampings | 13160 | 37694 | 50854 | 4745 | 10025 | 14770 | .349 | .473 |
| 102. Brass, Bronze + Copper Castings | 10260 | 21309 | 31569 | 4502 | 9138 | 13640 | .481 | .493 |
| 103. Iron + Steel Forgings | 13070 | 34100 | 47170 | 4765 | 11145 | 15910 | .383 | .428 |
| 104. Primary Metal Products Nes | 15840 | 18649 | 34489 | 6554 | 9476 | 16030 | .849 | .692 |
| 105. Metal Containers | 18720 | 39734 | 58454 | 10848 | 9902 | 20750 | .471 | 1.095 |

## APPENDIX TABLE I (Cont.)

| Sector | Product Category | $p_i^s$ | $h_i^s$ | $k_i^s$ | $p_i^f$ | $h_i^f$ | $k^f$ | $p_i^s/h_i^s$ | $p_i^f/h_i^f$ |
|---|---|---|---|---|---|---|---|---|---|
| 106. | Cutlery | 10100 | 20473 | 30573 | 13694 | 7976 | 21670 | .493 | 1.717 |
| 107. | Hand + Edge Tools | 8650 | 29390 | 38040 | 7959 | 8871 | 16830 | .294 | .897 |
| 108. | Handsaws + Sawblades | 7780 | 18343 | 26123 | 6609 | 7761 | 14370 | .424 | .852 |
| 109. | Hardware Nes | 10200 | 28076 | 28276 | 6925 | 8735 | 15660 | .363 | .793 |
| 110. | Sanitary + Plumbing Fixtures | 10560 | 25764 | 36324 | 6391 | 8509 | 14900 | .410 | .751 |
| 111. | Nonelectric Heating Equipment | 7070 | 24427 | 31497 | 7057 | 8373 | 15430 | .289 | .843 |
| 112. | Structural Metal Products | 6930 | 27283 | 34213 | 5264 | 8656 | 13920 | .254 | .608 |
| 113. | Platework + Boilers | 9010 | 34228 | 43238 | 7293 | 9347 | 16640 | .263 | .780 |
| 114. | Bolts + Nuts | 11800 | 36358 | 48158 | 6527 | 9563 | 16090 | .325 | .683 |
| 115. | Safes + Vaults | 6110 | 38511 | 44621 | 13432 | 9778 | 23210 | .159 | 1.374 |
| 116. | Fabricated Metal Products Nes | 10120 | 26116 | 36236 | 6257 | 8543 | 14800 | .388 | .732 |
| 117. | Steam Engines + Turbines | 13460 | 45537 | 58997 | 7183 | 11257 | 18440 | .296 | .638 |
| 118. | Internal Combustion Engines | 15990 | 24173 | 40163 | 8019 | 10411 | 18430 | .661 | .770 |
| 119. | Farm Machinery | 10230 | 20823 | 31053 | 6930 | 8810 | 15740 | .491 | .787 |
| 120. | Construction + Drilling Machinery | 10600 | 35814 | 46414 | 6483 | 10287 | 16770 | .296 | .630 |
| 121. | Conveying + Carrying Equipment | 6610 | 30535 | 37145 | 7443 | 9757 | 17200 | .216 | .763 |
| 122. | Industrial Trucks + Tractors | 7110 | 26440 | 33550 | 7309 | 9351 | 16660 | .269 | .782 |
| 123. | Machine Tools | 11620 | 41454 | 53074 | 5639 | 10851 | 16490 | .280 | .520 |
| 124. | Metal + Woodworking Machinery | 9320 | 23959 | 33279 | 6747 | 9103 | 15850 | .389 | .741 |
| 125. | Food Products Machinery | 7570 | 29204 | 36774 | 6928 | 9622 | 16550 | .259 | .720 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 126. *Textile + Laundry Machinery* | 9440 | 21364 | 30804 | 7610 | 8550 | 16160 | .442 | .890 |
| 127. *Paper Making Machinery* | 10960 | 31110 | 42070 | 5966 | 9814 | 15780 | .352 | .608 |
| 128. *Special Industry Machines Nes* | 8540 | 30941 | 39481 | 6868 | 9802 | 16670 | .276 | .701 |
| 129. Air Compressors + Pumps | 8880 | 27219 | 36099 | 7770 | 9430 | 17200 | .326 | .824 |
| 130. Ball + Roller Bearings | 15800 | 30400 | 46200 | 4714 | 9746 | 14460 | .520 | .484 |
| 131. Industrial Furnaces + Ovens | 2760 | 8020 | 10780 | 2566 | 4004 | 6570 | .344 | .641 |
| 132. General Industrial Machinery Nes | 7910 | 24793 | 32703 | 6738 | 9182 | 15920 | .319 | .734 |
| 133. Typewriters | 10250 | 25301 | 35551 | 12402 | 9238 | 21640 | .405 | 1.342 |
| 134. Computers | 7400 | 41578 | 48978 | 9217 | 10863 | 20080 | .178 | .849 |
| 135. Calculating + Accounting Machines | 7560 | 20586 | 28146 | 8275 | 8765 | 17040 | .367 | .944 |
| 136. Scales + Balances | 4870 | 23451 | 28321 | 6893 | 9047 | 15940 | .208 | .762 |
| 137. Office Machinery Nes | 9210 | 26824 | 36034 | 9625 | 9385 | 19010 | .343 | 1.026 |
| 138. Automatic Merchandising Machines | 7190 | 7716 | 14906 | 6431 | 7479 | 13910 | .932 | .860 |
| 139. Refrigeration Machinery | 8320 | 20541 | 28861 | 8307 | 8753 | 17060 | .405 | .949 |
| 140. Nonelectrical Machinery Nes | 7950 | 22605 | 30555 | 5102 | 8968 | 14070 | .352 | .569 |
| 141. Electric Measuring Instruments | 5670 | 30040 | 35710 | 6232 | 8838 | 15070 | .189 | .705 |
| 142. Transformers, Motors + Generators | 8500 | 28378 | 36878 | 5660 | 8670 | 14330 | .300 | .653 |
| 143. Carbon + Graphite Products | 24760 | 29715 | 54475 | 10636 | 8804 | 19440 | .833 | 1.208 |
| 144. Household Cooking Equipment | 6690 | 22527 | 29217 | 6044 | 8086 | 14130 | .297 | .748 |
| 145. Household Refrigerators + Freezers | 8870 | 33611 | 42481 | 8603 | 9197 | 17800 | .264 | .935 |
| 146. Electrical Housewares + Fans | 6240 | 10702 | 16942 | 9004 | 6906 | 15910 | .583 | 1.304 |
| 147. Sewing Machines | 10810 | 38991 | 49801 | 6884 | 9736 | 16620 | .277 | .707 |
| 148. Electric Lamps | 9830 | 13094 | 22924 | 10608 | 7142 | 17750 | .751 | 1.485 |

APPENDIX TABLE I (Cont.)

| Sector | Product Category | $p_i^s$ | $h_i^s$ | $k_i^s$ | $p_i^f$ | $p_i^f$ | $k_i^f$ | $p_i^s/h_i^s$ | $p_i^f/h_i^f$ |
|---|---|---|---|---|---|---|---|---|---|
| 149. | Lighting Fixtures | 6650 | 19563 | 26213 | 7006 | 7794 | 14800 | .340 | .899 |
| 150. | Radio + TV Equipment | 5450 | 42988 | 48438 | 4951 | 10129 | 15080 | .127 | .489 |
| 151. | Phonographic Records | 6250 | 9939 | 16189 | 8232 | 6828 | 15060 | .629 | 1.206 |
| 152. | Telephone + Telegraph Apparatus | 9360 | 37508 | 46868 | 6941 | 9579 | 16520 | .250 | .725 |
| 153. | Electronic Components + Accessories | 7910 | 22078 | 29988 | 3909 | 8041 | 11950 | .358 | .486 |
| 154. | Storage Batteries | 9940 | 34723 | 44663 | 7780 | 9310 | 17090 | .286 | .836 |
| 155. | Primary Batteries | 7750 | 14431 | 22181 | 12803 | 7277 | 20080 | .537 | 1.759 |
| 156. | X-Ray Apparatus + Tubes | 5860 | 42854 | 48714 | 7132 | 10118 | 17250 | .137 | .705 |
| 157. | Automotive Electrical Equipment | 8440 | 34409 | 42849 | 7764 | 9276 | 17040 | .245 | .837 |
| 158. | Motor Vehicles + Bodies | 13210 | 25855 | 39065 | 13616 | 11064 | 24680 | .511 | 1.231 |
| 159. | Trailers | 3720 | 6420 | 10140 | 4832 | 7338 | 12170 | .579 | .659 |
| 160. | Aircraft | 6820 | 41483 | 48303 | 5339 | 12121 | 17460 | .164 | .440 |
| 161. | Aircraft Engines + Equipment | 8830 | 35132 | 43962 | 4268 | 11482 | 15750 | .251 | .372 |
| 162. | Ships + Boats | 5730 | 32125 | 37855 | 1538 | 9392 | 10930 | .178 | .164 |
| 163. | Locomotives + Parts | 11780 | 50318 | 62098 | 18106 | 11204 | 29310 | .234 | 1.616 |
| 164. | Railroad Cars | 9660 | 36258 | 45918 | 1771 | 9799 | 11570 | .266 | .181 |
| 165. | Motorcycles, Bicycles + Parts | 5940 | 15325 | 21265 | 4381 | 7709 | 12090 | .388 | .568 |
| 166. | Scientific Instruments + Control Equip. | 6040 | 35157 | 41197 | 5394 | 9016 | 14410 | .172 | .598 |
| 167. | Optical Instruments | 6600 | 43467 | 50067 | 5965 | 9845 | 15810 | .152 | .606 |
| 168. | Medical Appliances + Equipment | 6470 | 25155 | 31625 | 8762 | 8008 | 16770 | .257 | 1.094 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 169. Opthalmic Goods | 6020 | 15288 | 21308 | 6438 | 7022 | 13460 | .394 | .917 |
| 170. Photographic Equipment + Supplies | 17720 | 57378 | 75098 | 21716 | 11234 | 32950 | .309 | 1.933 |
| 171. Watches + Clocks | 3840 | 17270 | 21110 | 6386 | 7224 | 13610 | .222 | .884 |
| 172. Jewelry + Silverware | 4680 | 24708 | 29388 | 6119 | 7911 | 14030 | .189 | .773 |
| 173. Lapidary Work | 6370 | 29030 | 35400 | 8507 | 8343 | 16850 | .219 | 1.020 |
| 174. Musical Instruments + Parts | 5250 | 17739 | 22989 | 4287 | 7213 | 11500 | .296 | .594 |
| 175. Games + Toys | 5069 | 3585 | 8654 | 3922 | 13408 | 17330 | 1.414 | .293 |
| 176. Children's Vehicles | 6860 | 10903 | 17763 | 4554 | 6526 | 11080 | .629 | .698 |
| 177. Misc. Sporting Goods | 5180 | 8676 | 13856 | 5205 | 6305 | 11510 | .597 | .826 |
| 178. Writing Instruments + Materials | 6630 | 15678 | 22308 | 6327 | 7003 | 13330 | .423 | .904 |
| 179. Costume Jewelry | 3260 | 5329 | 8589 | 4988 | 5972 | 10960 | .612 | .835 |
| 180. Buttons | 5120 | 11302 | 16422 | 4470 | 6570 | 11040 | .453 | .680 |
| 181. Needles, Pins + Fasteners | 6560 | 11756 | 18316 | 6765 | 6615 | 13380 | .558 | 1.023 |
| 182. Brooms + Brushes | 5800 | 5540 | 11340 | 5336 | 5994 | 11330 | 1.047 | .890 |
| 183. Hard Floor Coverings | 28460 | 38547 | 67007 | 15684 | 9296 | 24980 | .738 | 1.687 |
| 184. Miscellaneous Manufactures Nes | 4920 | 8842 | 13762 | 4484 | 6316 | 10800 | .556 | .710 |

Note: On the correspondence of the product categories with the US standard industrial classification and the UN standard International Trade classification, see Appendix Table 2.

For an explanation of the definitions and symbols used, see Equations (1) and (3) in the text.

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# ECONOMIC DEVELOPMENT: SOME STRATEGIC ISSUES*

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We live in a miserable world. One person in five suffers regularly from hunger. One in three lives in conditions of recognisable poverty. The majority of the people in the world do not have access to reliable medical and hospital facilities, or to a regular supply of safe water. The expectation of life at birth is less than fifty years in three-quarters of the poor countries. One would have to be very foolish to be cheerful about the state of the world.

While there are many different views of the kind of world we should want, there is a great deal of agreement on some of its basic characteristics. Freedom from hunger, expansion of longevity, access to regular medical and hospital facilities, elimination of avoidable morbidity, the guarantee of a basic level of education for all, and similar objectives have been extensively discussed in the literature on economic development. I shall call these 'the elementary goals of economic development'.

The main controversial issues in economic development do not arise from differences on the content of these 'elementary goals', but from disagreements on how best to pursue these goals. It is not so much a question of *where* to go, but *how* to get there.

Traditional development theory has tended to emphasise one royal road, to wit, fast economic growth. Indeed, the subject was born in the post-war world in close alliance with the new subject of 'economic growth', launched by the early contributions of Harrod and Domar. Recently, the traditional approaches have come under severe attack, and it is important to assess the force of these critiques.

At the risk of over-simplification, the approach of traditional development economics on 'how to get there' can be split into two parts: (1) the role of growth in economic development; and (2) the roles of some particular 'strategic' variables (such as planning, capital accumulation and industrialisation) in fostering economic growth.

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*This paper draws on three earlier writings of Amartya Sen: *Poverty and Famines: an essay on entitlement and deprivation*, Oxford: Clarendon Press, 1981; 'Public Action and the Quality of Life in Developing Countries', *Oxford Bulletin of Economics and Statistics* (43), 1981; 'Development: which way now?' (Presidential Address to the Development Studies Association at the Annual Meeting of 1982) published in *The Economic Journal*, 93 (372), December 1983, pp. 745–62. (Published by Courtesy of Third World Foundation for Social & Economic Studies, New Zealand House, London.)

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I shall call the first 'the growth relevance question' and the second 'the growth causation question'. I take up first—in the next section—the second question ('growth causation') and assess some of the critiques of the traditional diagnoses of strategic variables. After that I take up 'the growth relevance question'. In the next section, based on the analysis of the preceding sections, an alternative approach involving 'entitlement' is explored, and the rest of the paper is devoted to pursuing that approach.

### The Growth Causation Question

While there have been several different approaches within traditional development economics, it is nevertheless fair to say that there has been a good deal of agreement in traditional development theory on the importance of the following 'strategies' for enhancing economic growth:

(1) fast capital accumulation:
(2) rapid industrialisation;
(3) mobilisation of underemployed manpower;
(4) planning and state activism.

These themes—especially the need for planning—are closely linked to the rejection of traditional neo-classical economics as applied to developing countries. Even the deliberate fostering of industrialisation, the mobilisation of 'surplus labour', and a public policy of rapid capital accumulation are closely connected with rejecting the adequacy of market-based allocation mechanism. The rationale of that market mechanism has, of course, been a central concern of the neo-classical economic tradition.

Recently, traditional development economics has been much discredited, and the forces leading to that discrediting have been illuminatingly analysed by Albert Hirschman. This discrediting, as Hirschman notes, is closely related to the resurgence of neo-classical economics. In this context, the evident success of the market mechanism in some economies such as South Korea, Hong Kong and Singapore, has been firmly cited. On the other hand, the low performance of some developing countries has been used to debunk the traditional themes of standard development economics.

While state activism and planning have been particularly subjected to criticism, other features of traditional development economics have not escaped being attacked. It has been argued that traditional development economics has vastly overemphasised the role of capital accumulation and the creation of 'surplus'. Sharp criticisms have also been levelled against industrialisation for the domestic market. The alleged existence of under-employed labour has also been seriously challenged.

However, empirical attempts at disestablishing the existence of 'disguised unemployment', e.g., by Theodore Schultz, have been far from convincing. Furthermore, what is really at issue is the scope for and the importance of labour mobilisation and use, and not whether the opportunity cost of labour is exactly zero. While the particular characterisation of some of the classic development models, e.g,, Lewis's model of 'unlimited supply of labour', can be subject to criticism (as Lewis himself has done), the rationale of the theme of utilisation of underemployed labour is more robust than that.

The same is true of several of the other main themes of development economics. The theme of state activism and planning raises important political issues. But it is not easy to demonstrate that the market on its own has done much for the underdeveloped countries, expect for tiny enclaves like Hong Kong and Singapore. South Korea—while vehemently non-socialist—has had one of the most powerful and interventionist regimes anywhere. To read the South Korean experience as a triumph of unguided market mechanism is to indulge in fantasies. I have discussed this question elsewhere.

In my Presidential Address to the Development Studies Association in Dublin in September 1982, I tried to present a systematic comparison of the growth performances of the low-income and middle-income developing countries, and related these differences in performance to the strategic variables identified by the traditional themes of development economics. The development theories presented in the 1940s and 1950s were examined in the light of the empirical evidence of more recent decades, viz., the 1960s and the 1970s. The results were quite strongly supportive of the identified themes. For example, in the low-income category, of the three fastest-growing countries, two also have the *highest* rates of capital accumulation, and of the three *slowest* growers, two have the *lowest* accumulation rates. For the middle-income category, the three top-growth performers are also the three with the highest accumulation rates, and the three bottom-growth performers are exactly the three with the lowest rates of accumulation.

As far as industrialisation is concerned, while the picture is less clear for middle-income countries, especially among the slowest growers, the relationship is closer for low-income countries and also for the two groups put together.

Similarly, it can be seen that the success in terms of high growth relates closely to the mobilisation of the underemployed labour force and to the active use of economic planning.

In fact, for 'the growth causation question', it is not easy to fault the themes highlighted by traditional development economics. Ideas formulated in the first two decades of development economics (the 1940s and 1950s) tend to get considerable support from the experience following that period. Since the contrary impression is often given in the recent literature on economic development, the fairly good record of traditional development economics in the field of 'growth causation' is worth asserting. There is still much to be learned from these themes and theories, since the growth performances of developing countries vary a great deal and the merits of old-fashioned wisdom of development economics are not yet lost.

## The Growth Relevance Question

The real limitations of traditional development economics arise not from the choice of means to the end of economic growth, but from the insufficient recognition that economic growth is a very limited means to the fulfilment of the 'elementary goals' of development. This question needs further investigation.

How does the growth picture relate to the elements of the quality of life that have come to receive such attention lately? Not too badly, it would appear (misleadingly, as we shall presently see) at the top end of the growth table. Among the low-income countries, two of the three top growth performers, viz., China and Sri Lanka, also have the two highest expectations of life, and also the two highest adult literacy rates. And both China and Sri Lanka are continuing to raise their life expectancy figures despite their comparatively high level—ten years more than the nearest rival. In the middle-income group, two of the three top growers, viz., Romania and Yugoslavia, have the highest life expectancy in that group. In terms of adult literacy rate, all three of the fastest growers, i.e. including South Korea, are among the top four countries.

But this picture is misleading. It relates absolute *levels* of longevity with *growth rates* of GNP and not to *levels* of GNP. Also high quality of life in the shape of better education and health is not merely a consequence of economic prosperity, but it also contributes to economic growth. Further, an activist government can promote education and health, just as it promotes economic growth, and the source of the observed relation may be a common association with planning and government activism.

It is important to note in this context that similar levels of achievement in life expectancy, literacy, health, higher education, etc., can be seen in countries with widely varying income per capita. To take just one example, Brazil and Mexico have levels of GNP per capita ($2,050) and $2,090, respectively) that are seven to eight times those of China and Sri Lanka ($290 and $270 respectively), but the former pair do not have a higher life expectancy than the latter pair.

If the government of a poor developing country is keen on raising the level of health and the expectation of life, then it would be pretty foolish of it to try to achieve the latter *through* raising its income per head rather than going *directly* at it, as China and Sri Lanka have both done.

The point is that growth is a means, and for some important ends it is not a very efficient means either. In an earlier paper, I calculated that had Sri Lanka tried to achieve its high level of life expectancy not through direct public action, but through straightforward growth in the same way as an average developing country, then it would have taken Sri Lanka—depending on particular assumptions—somewhere between 58 years and 152 years to get where it already now happens to be. A long haul, no matter which of these alternative assumptions we choose.

## Entitlements and Development

I would now like to discuss what appear to me to be the main thematic deficiencies of traditional development economics. A major problem lies in its concern with *goods* rather than with *entitlements*. Entitlement refers to the set of alternative commodity bundles that a person can command, using the totality of rights that the system offers to him. To take the simplest case, if whatever I have to sell, can be sold for, say, $100, then my entitlement—based on market purchase—is represented by the set of all alternative commodity bundles costing no more than $100. This illustration oversimplifies the problem, but it gives us an idea as to what to look for, to wit, what a person can acquire—establish command over—through the system in operation in that society.

For most of humanity, about the only commodity a person has to sell is his labour-power, so that the person's entitlements depend crucially on his or her ability to find a job, the wage rate for that job, and the prices of commodities that he wishes to buy. I have tried to argue elewhere that the problems of starvation, hunger and famines in the world could be better analysed through the concept of entitlement than through the use of the traditional variables of food supply and population size. The intention here is not, of course, to argue that the supply of goods—food, in this case—is irrelevant to hunger and starvation, but that the supply is just one influence among many, and, in so far as supply is important, it is so precisely because it affects the entitlements of the people involved, typically through prices. Ultimately we are concerned with what people can or cannot do—what their 'capabilities' are—and this links directly with personal ownership, exchange and entitlements rather than with overall supplies and outputs.

## Starvation and Entitlement Failure

In a market economy, a person's entitlements depend on his ownership as well as on the terms at which he can exchange—through trade or production—what he owns, for other commodities. A person's ability to acquire any bundle with enough food can collapse either because of a sharp fall of his ownership, or because of a worsening of his 'exchange entitlement', i.e., the terms at which he can exchange his ownership bundle into other bundles.

The importance of looking into entitlement relations as opposed to over-all availability data is illustrated by examining the inability of the availability data to give us clues as to the genesis of the famines in Ethiopia in 1973 and 1974 and Bangladesh in 1974. The Ethiopian famine killed, according to various estimates, between 50,000 to 200,000 people, most of them dying during 1973; while the famine continued into 1974 with a somewhat different geographical focus, the mortality was a good deal lower then.

Was 1973 a year of exceptionally bad food availability in Ethiopia? It would appear that this was far from the case. Table 1 provides estimates of calorie availability per head in Ethiopia in 1973 compared with previous years, and it would seem that the availability in 1973 was more or less the same as that in previous years—higher than some and lower than others.

### TABLE 1

### FOOD AVAILABILITY IN ETHIOPIA: COMPARED WITH PREVIOUS YEARS

(Standard = calories per capita)

| Year | is-à-vis 1973, food availability in the previous years respectively was |
|---|---|
| 1972 | 3% more |
| 1970 | 5% less |
| 1967–9 | 7% less |
| 1964–6 | 9% less |
| 1961–5 | 1% more |

*Source: FAO Production Yearbooks*, for 1971 and 1976. For methodological issues and some minor problems with these data, see *Poverty and Famine*, Chapter 7. The 1971 figures could not be obtained.

The genesis of the famine can, in fact, be traced to varying patterns of entitlements. The famine concentrated in the province of Wollo, and it is certainly true that Wollo did have a substantial decline in the output of foodgrains during that year. But the question that then arises is why didn't food move into Wollo to meet the unsatisfied demand since there was no real shortage of food for the country as a whole? This is where the nature of market entitlements comes in with full force. The Wollo farmer who lost his crop not merely lost the food he could eat, but also his main ownership bundle with which he could enter the market. He did not have anything to buy food with in the market, and the fairly high availability of food in the country as a whole will tell us nothing about his ability to command food through the market mechanism,

This entitlement explanation of starvation in Wollo can be contrasted with another explanation that has been offered, viz., the lack of transport facilities—especially the absence of a road network in Wollo. This explanation gets into difficulty for at least three different reasons. First, while roads *within* Wollo *are* underdeveloped, the two main Ethiopian highways pass through Wollo, and indeed the north-south highway passes right through the most affected region of Wollo. Food shortage in this region cannot, therefore, be explained by the lack of road development. Second, there are reports throughout the famine period of food moving *out of* Wollo into other regions of Ethiopia, especially Addis Ababa and Asmara. Third, despite widespread starvation and famine, food prices rose remarkably little in Wollo; and, indeed, for some crops even came down. Clearly, something more than food output collapsed in Wollo, viz., the power of the Wollo population to buy food and indeed even to retain the much reduced food supply of the province.

Apart from the farmer, the pastoralist was also affected both in Wollo in 1973 (mainly nomads of the Afar community) and in Hareraghe in 1974 (mostly nomads of the Ogaden Somali and Issa Somali communities). In analysing their deprivation, it can be seen that they suffered not merely from a fall in the animal stock due to drought, but even more from a precipitate fall in the exchange rate of animals for food grains; these exchanges normally meet about half the calorie requirements of the pastoralist. The entitlements were hit at both ends, and this pattern seems to be quite common in the region (and in Sahel countries), whereby a fall in both animal stock and foodgrains stock goes with a sharp decline in the exchange rate against animals. The phenomenon is connected with animals being a store of value for the pastoralist which he has to sell in the market when short of cash. It also relates to the important fact that foodgrains being a cheaper food, the pastoralist moves to consuming *more* foodgrain offering *more* animals in the market when the death of animals makes him poorer. Hit by the drought, the pastoralist was smashed by the market mechanism.

In understanding the nature and the magnitude of starvation in Ethiopia during the famine years, the entitlement relations have to be closely examined. While it is tempting to think of famines in Ethiopia being caused by general poverty, since it is one of the poorest countries in the world, the actual famine cannot be explained in terms of low average income or low food availability per head.

The same is true of the Bangladesh famine of 1974, in which mortality was very much higher. The foodgrains availability in Bangladesh in 1974 compared with that in the previous years is reported in Table 2.

While there were some years in the preceding ten in which food availability was higher than in 1974, in most years that was not the case. Indeed, if one were to look for a plausible candidate for being a 'famine year' in the first half of the 1970s, one would have been least likely to pick 1974, which had higher food availability than any other year during 1971–5. (The comparison with 1975 is not given in Table 2, but in fact the availability per head in 1974 compared with 1975 was 7 per cent higher.)

In fact, unlike in Ethiopia in which starvation could be related to

### TABLE 2

### FOOD AVAILABILITY IN BANGLADESH IN PREVIOUS YEARS COMPARED WITH 1974

| Year | Alamgir's estimates of foodgrains availability per person | FAO estimates of calories per capita |
|---|---|---|
| 1973 | 4% less | 6% less |
| 1972 | 4% less | 6% less |
| 1971 | 7% less | n.a. |
| 1970 | 7% more | n.a. |
| 1969 | 4% more | n.a. |
| 1968 | 1% less | n.a. |
| 1967 | 6% less | n.a. |
| 1966 | Same | n.a. |
| 1965 | 8% more | n.a. |
| 1964 | 1% more | n.a. |

Source: Table 6.23 in Alamgir, *Famine in South Asia* and *FAO Production Yearbook 1976*.

regional food availability (even though that itself requires an entitlement explanation, as we saw), in Bangladesh the district food availability data give no clue to the geographical distribution of hunger. The highest rates of destitution were observed in the districts of Rangpur, Mymensingh, Dinajpur and Sylhet. In terms of food availability per head, of the nineteen districts these four were among the *top* five (indeed ranked 1, 2, 3 and 5)!

The explanation has to be sought in terms of variations in food entitlements in the economy of Bangladesh. The famine was precipitated by flooding of the Brahmaputra river during June to September of 1974. It affected the standing rice crop (*aus* crop, harvested in July-August), and more importantly, it affected the planting and transplanting of the winter harvest of rice (*aman* crop), the most important crop in Bangladesh. The availability figures for the famine year 1974—the famine raged from July to November—were not much reduced by these losses, since the *aus* crop was otherwise good, and since the *aman* crop, which did decline, was harvested in December—*after* the famine was over. On the other hand, the flooding had an immediate impact on the employment of rural labour, since the work requirement for harvesting *aus*, and, more importantly, for planting and transplanting *aman*, was immediately and sharply reduced. An occupational breakdown of the destitutes shows that the most affected group—both in terms of absolute number of destitutes as well as in terms of *intensity* of destitution (percentage of population made destitute)—was the group of rural wage labourers.

Another source of entitlement decline was the sharp rise in the relative price of rice. This partly reflected general inflationary pressure, partly also the speculative and precautionary responses to anticipated shortage in the future. The proportion of rice output sold in the market declined, and more was held for future sale or consumption.

The entitlements of the rural labourers were slashed both by the decline in employment opportunity as well as by the downward movement of the exchange entitlement of employed labour through a fall in the amount of rice commanded by the wage rate. The rice-exchange rate of rural labour fell by 42 per cent for Bangladesh as a whole during June to October of 1974, with the sharpest falls in the three famine districts, *viz.*, Mymensingh (70 per cent), Rangpur (58 per cent) and Sylhet (58 per cent).

The market adjustments that have to be considered concern not merely the labour market, but also the commodity markets, in particular the market for rice (the staple food of the Bengali). While the decline of the *aman* harvest of rice affected the total supply only *after* the famine was over, the anticipated decline had an *earlier* impact on the *market* supply of rice. This was particularly sharp since the anticipated decline came after a good deal of inflation (especially affecting rice prices), which had been going on for some years previously, and since the usual buffer of American grains was denied precisely at this moment because of a dispute involving Bangladesh's trade with Cuba, with the United States insisting on the suspension of Bangladesh's jute exports to Cuba.

Despite the general low level of mean income in Bangladesh, the famine struck not in a year of especially low total real income or low food availability, but in fact in a *comparatively* favourable year in terms of these aggregate magnitudes. It would, therefore, be a mistake to think of Bangladesh's—or Ethiopia's—poverty in primarily Malthusian terms, focusing on relative movements of food output and population size. The ability of particular groups—the Wollo farmer or the Rangpur rural labourer—to avoid starvation is a question of their entitlements, and not just of aggregate availability. The variability of market entitlements in the absence of social security provides the real clue to the famines.

## Social Provision and Entitlements

Entitlements are not, of course, related only to market processes. In a socialist economy that operates partly outside the market system, the entitlements will depend on what the families can get from the State through the established system of command. As is well known, there has been a great deal of debate in recent years in China as to how these command systems should be organised. Even in a non-socialist economy, entitlements go beyond the operation of market forces.

Take the case of famine reliefs. A destitute is *entitled* to some free food *if* there is a relief system offering that. Whether a starving person will actually have such an entitlement will depend on whether such a relief operation will, in fact, be launched. The setting-up of such a relief operation is partly a matter of political and social presure. One 'buys' food in this context not with income but with political pressure.

The operation of political forces affecting entitlements can be far from simple. For example, with the present political system in India, it is almost impossible for a famine to take place. The pressure of newspapers and diverse political parties in India make it imperative for the government in power to organise swift relief. No matter how and where famine threatens, it leads to policy responses that stop the famine short of actually occurring.

On the other hand, there is no such relief for the third of the Indian rural population who go to bed hungry every night and who lead a life riddled with regular deprivation. The quiet presence of non-acute, endemic hunger leads to no newspaper turmoil, no political agitation, no riots in the Indian parliament. The system takes it in its stride. The contrast between the elimination of famines and the toleration of endemic malnutrition is a part of the reflection of the political and economic forces governing the entitlement to food.

Entitlement is a complex relation, and the political, economic and social forces governing it are difficult to analyse. But in order to understand the process of economic development, we have no option but to go in that complex direction.

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# WAGE POLICY AND INCOME DISTRIBUTION IN DEVELOPING COUNTRIES

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## I. Introduction

The stark contrast between the world of the Coventry ribbon weaver in 1819, and that of the Volta Redonda Steel worker in 1959, cannot be attributed to general economic development in Brazil; about half the Brazilian population in 1959 lived on incomes between $ 50 and $ 100 p.a.[1] Nor can it be imputed solely to an improvement in labour and welfare legislation. At the San Pedro sugar plantation in North-east Brazil, for instance, "Two-thirds of the heads of households made less than the legally established minimum daily wage . . . which was then approximately US$ 0.90 . . . . Three-quarters of the family heads were illiterates; 83 per cent of the children of school age were not going to school."[2] Yet, 80 per cent of the heads of households were union members.[3] Despite minimum wage laws, an officially recognized union, and a relatively large firm (about 2,000 workers), the average farm workers' income at San Pedro was $0.50 a day.[4]

These contrasts—both over time, and within one poor country—raise questions regarding the actual, and the desirable contribution of wage policy. Clearly these contrasts are the joint result of greatly changed labour policies (along with underlying attitudes—in part, a demonstration effect of developed countries), and of a different, much more dualistic structure of economic growth.

On first examination, wage policy appears central to any redistributive program. Most inequality in poor countries can be broken down into that within labour—the labour "elite" vs. the rest of the labour force—and that between capitalists and workers. The obvious redistributive approach is to level wages, and raise them at the expense of capital income. Also, since many of the rural poor are part or full-time wage-earners, any attack on rural poverty is almost certain to require higher rural wage levels.

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[1] See Albert Fishlow, "Brazilian Size Distribution of Income", *AER*, LXII, No. 2 (May 1972), Table 1, p. 392.

[2] Emanuel de Kadt, *Catholic Radicals in Brazil* (London: Oxford University Press, 1970), p. 177. Data refer to 1965.

[3] *Ibid.*, p. 177.

[4] *Ibid.*, p. 185.

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Thus, it is hardly surprising that wage increases are the most familiar feature of redistributive political programs.

Yet there is a broad consensus amongst economists that wage increases are, by and large, "the easy solution" but a "most unfortunate"[5] approach to income redistribution in LDCs. This generally negative attitude towards wage increases is supported by three different arguments: such pressure is held to be (a) futile, because for most of the labour force, and in the long run, market forces will dominate, (b) inequitable, because it benefits a relatively small "middle income" group rather than the mass of the poor, and (c) harmful, because it reduces employment by increasing capital-intensity in the modern sector, and slows growth by reducing savings. There is, of course, some inconsistency between the futility and the bad-effects arguments, but each may be valid in different situations.

This paper is a review of the arguments and the evidence regarding the impact of wage policy on income distribution in LDCs. Following this introduction, the impact of wage policy on income distribution will be traced by examining policy formulation (Section II), policy implementation, particularly as it is constrained by market structures (Section III), and the direct impact of policy on the wage levels of target groups (Section IV).

Direct effects on current wage levels are only half the story of wage policy. Wage changes have indirect consequences throughout the economic system. The most important of those repercussions are those which affect factor choice and employment absorption in the modern sector, and those which affect growth. These repercussions have distributive effects which, in the long run, may be more significant than the current redistributive potential of wage policies. This chapter, however, deals only with direct impact; the indirect impact is discussed in both the income distribution model contained in the introductory chapter by Frank and Webb, and in Bruton's analysis of trade and industrialization policies. Also, rural wage policy is not dealt with here. Though the principal target group for distributive policy are the rural poor, many of whom are chiefly wage-earners, most wage policy, in practice, is directed at urban and modern sector workers. This omission is compensated to some extent by the discussion of farm productivity strategies and of rural employment creation through public works in the chapters by Cline and Lewis respectively.

I define wage policy here as being aimed at either (i) raising, (ii) maintaining, or (iii) lowering the market wage that would obtain in absence of government wage measures. In this sense, policies can be described as being pro-labour, neutral or pro-capital[6]. By "government measures" I refer to *current* measures, since today's "market" wage is obviously partly determined by the history of government acts that have helped to shape market structures. Secondly, "wage measures" are defined here more broadly than is usual, in that they include direct wage-setting, institutional or legal changes (such as strike laws) that indirectly affect wage outcomes, and administrative partiality in the application of rules that affect collective bargaining outcomes. Other aspects of labour policy, such as social security laws, and the effects of job security laws on the choice of technologies, are not discussed here. Finally, policy refers to intent rather than outcome.

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[5] Stephan R. Lewis, Jr., *Notes on Industrialization and Income Distribution in Pakistan*, Research Memorandum No. 37, Center of Development Economics, Williams College, September 1970, p. 15.

## II. Policy Formulation

1. *The Variables* The choice of wage policy is complicated by the variety of (i) policy objective, (ii) target groups, and (iii) policy instruments involved.

Wage policy is relevant to at least four separate political and economic goals: equity, growth, price stability and political stability. This chapter is concerned with the first, but wage policies are in practice formulated with these several ends in mind. Furthermore, each of these objectives may require wages to rise or to fall in different circumstances. Two basic target groups will be studied—modern and traditional[7] sector wage-earners, since policy must allow for the very different market characteristics and usually different income situations of each. Finally, a major concern of wage policy is with differentials between various categories of workers such as skilled and unskilled, white- and blue-collar, and with regional and racial categories; again, wage policy may seek to increase or reduce those differentials.

Wage policy is implemented through a particularly broad and varied set of instruments. These operate on two levels. The first involves intervention, both administrative and legal, in the current wage determination process. It includes the normal decisions regarding government employee pay-scales, and the occasional direct wage-setting for the private sector, particularly during rapid inflation. It includes the greater or lesser govern-

[6] In this special sense, socialist and other leftist regimes could be described as pro-capital; in fact, socialist governments generally are pro-capital. This classification is modified below to acknowledge the distinction between policies aimed at raising wages in either the modern or the traditional sectors.

[7] I define "modern" and "traditional" as high and low labour productivity, and perhaps would have used the latter terms to avoid confusion but the former concepts are more generalized and roughly mean the same. High labour productivity correlates well with size of firm (excluding farms), with the "organized" sectors, with what could be called the "formal" sector, and with the "enumerated" sector. For distributive analysis, however, the most useful criterion is productivity since it identifies *where* income originates and where it goes. Enumeration and size of firm, however, are useful statistical approximations or proxies for the high productivity sector.

ment participation in the setting of minimum wages, and in collective bargaining, usually through tripartite boards. Finally, it includes the administrative and judicial implementation of labour and price legislation.

Wage policy also operates at a second level by modifying the wage determination environment, namely the institutional and legal framework, and the economic structure of labour markets. The most obvious of such changes consist of legislation regulating union activity—their legal status, whether and when strikes are allowed, whether and how union funds can be collected, job security for union leaders, and strikers, etc. Less obviously, government can affect market outcomes by changing the structural characteristics of the market in ways that affect the degree of competition. Tariff protection, for instance, creates monopoly rents that invite wage increases. Conversely, export-promoting policies will make the business sector more cost-conscious; exporters are less able to pass on wage increases by raising prices.

One effect of this two-tiered influence on wages is that it makes wage policy more flexible. A government that is sympathetic to labour, for instance, can make basic changes in the rules of collective bargaining to favour labour in future negotiations and simultaneously hold down wages to meet immediate stabilization or growth targets. Second, it becomes more difficult to know what a government is actually doing—whether its actions are biased towards raising or lowering wages—since it can be acting in different directions at these two levels. Third, changes in the institutional and economic environment of collective bargaining tend to outlast the particular bias of the regime or regime-period. The history of labour policy in most countries records a series of legislative advances in favour of labour. Such advances have tended to cumulate, ratchet-wise despite political vicissitudes, because legislative reversals required major polical shifts against labour.

2. *Policy Choice* Wage policies seem to cluster around three main approaches which can be described respectively as (a) the low-wage policy, (b) the industrial consensus approach, and (c) the pro-modern sector labour approach aimed at evolutionary political radicalization. While, contrary to most preconceptions, high-wage policies aimed primarily at redistribution are the exception. Each of these approaches is consistent with particular economic settings and political priorities. Elements of each may be found at any one time in a given country. The combination of a pluralist government with a policy that can be implemented through several instruments lends itself to confused political sharing, where each view regarding that policy can appear to be satisfied to some extent—like a boat built with several rudders, being steered simultaneously by several captains. Policy intent is easier to define when only one major instrument is available. Thus, there is no such easy way of appearing to satisfy opposite views on the relative priority of mass rural schooling; the schools are

either built or not.

The ambiguity of labour policy results from the variety of instruments that are relevant to wage levels and that may easily operate in conflicting directions. Ambiguity also results from the *continuous* nature of labour policy-making: wage levels are being decided continuously by the joint influence of market and government forces so that governments can easily modify, and even reverse over short periods, the intensity and direction of their intervention, especially, of course, in inflationary environments. Finally, complications arise from the dual function of wages—they are simultaneously a distributive objective, and a key instrument for other objectives such as stability and overall growth.

Despite such identification difficulties, it is possible to find cases where policy appears to be dominated by a stress on low wages, or on collective bargaining (consensus), or on the institutional reinforcement of organized (and "organizable") labour. There is surely a correlation between the political strength of a regime and the choice between these wage policy alternatives.

The *low-wage approach* could be called the orthodox policy preference of economists. It aims principally at keeping modern sector wages low, but it is not inconsistent with (low) minimum wages that would prevent "exploitation" and provide a welfare floor to the very poor. It is advocated both on grounds of growth and of equity. Most economists would still subscribe to the argument that savings are likely to be higher in a low-wage, high-profits economy either because of the nature of workers' and capitalists' savings propensities, or because profit income is easier to tax. This traditional argument for low wages is now reinforced by the employment and equity case against "high-wage islands".[8] On the other hand, this line of economic reasoning, i.e., low wages to encourage rapid, labour-absorbing modern sector growth, leads to acceptance of skill, occupational and even regional wage differentials required to draw labour into high productivity activities.[9] Acceptance of such differentials, which may at times be large and growing,[10] weakens the short-run equity case for this approach but it can be argued that the more important result for the poor is that employment absorption into the modern sector is accelerated and, therefore, that poverty is reduced more rapidly.

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[8] The growth and employment case for low modern sector wages is put forward in the paper by Henry Bruton, *Industrialization Policy and Income Distribution* in this volume, especially pp. 41–51. See also Gustav Ranis, "Industrial Sector Labour Absorption", *EDCC*, Vol. 21, No. 3.

[9] Cf. Bruton, *op. cit.*, "The general outcome of [on the job skill accumulation plus job mobility] is quite likely to be some increase in wage rates due to accumulated experience. It is difficult to be alarmed about these increases. They do not penalize employment and they do not result from exercise of any monopoly or discriminatory power." (p. 50)

[10] The widening of the wage and salary structure in Brazil over the last decade for instance has been explained as a necessary consequence of rapid growth. (See Carlos G. Langoni, "Distribucao da rende e des envolvimiento economico do Brazil", *Estudios*

It seems obvious, however, that only strong governments can adopt a low-wage policy. Such a policy seems to require more than government neutrality; it usually involves active suppression. Part of the reason lies in the well-known organizational and tactical resources of modern sector labour, and part of the reason has to do with legitimacy. Of all redistributive claims, wage demands surely have the highest degree of moral legitimacy. For most people "justice" is primarily "desert", or receiving what one has produced. The notion of equal sharing, or sharing based on need, is a more abstract and less powerful mover of men. Wage demands carry a claim to desert to the fruits of one's own labour that is not enjoyed, for instance, by the appeal for higher agricultural prices, or for larger public expenditures in rural areas.[11] Strong alternative moral claims can be used to offset wage demands. Such claims are provided, for instance, by the highly egalitarian content of Cuban and Chinese policies, and by the Arusha Declaration that provided the basis for the 1967 reversal of wage policy in Tanzania. National emergencies, such as those created by war, or risk of war, can be another substitute. They surely gave some legitimacy to anti-union policies in South Korea and Taiwan thus easing somewhat the degree of repression applied in these countries. Failing such powerful moral substitutes, however, low-wage policies generally require considerable repression of the natural political power of modern sector labour.

The *industrial consensus approach* is most identified with collective bargaining, which minimizes government participation, but it includes the corporate approach to wage determination where government comes close to direct wage setting. The common element is a largely politically motivated stress on consensus, on industrial peace. The guiding economic principle for wage settlements of this approach is capacity to pay.

The collective bargaining approach has been the standard policy prescription of the ILO and of many labour economists.[12] It places priority on the development of a balanced, smooth-running, industrial relations machinery with the double objective of minimizing government "inter-

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*Economicos*, Vol. 2, No. 5 (Oct. 1972), pp. 1–88.) Also, the rapid increase in white collar incomes in Africa immediately after Independence has been attributed to the greatly expanded personnel demands of the public sector.

[11] This argument is developed in R. Webb, *Government Policy and the Distribution of Income in Peru, 1963–1973*. Discussion Paper No. 39, RPED, Princeton University, March 1974, pp. 28–29.

[12] See E. A. Landy, in *International Labour Review*, Vol. 101, No. 6 (June 1970), p. 555; and James O. Morris, who equates a "more advanced" industrial relations process with one that places greater reliance on collective bargaining (*op. cit.*, p. 209).

ference" in labour markets, and either minimizing or institutionalizing industrial conflict. The wage outcome is given less importance than the procedure; or else, it is argued or presumed that an efficient labour market will generate the "best" wage outcome. Since balanced bargaining forces are an essential ingredient in this approach, and since labour has traditionally been organizationally weaker than business, the collective bargaining approach has generally stressed the institutional reinforcement of labour. Perhaps more important than the wage outcome, however, is the political attractiveness of a wage-determination process that minimizes both labour conflict, and government input.

Though the preference for collective bargaining is largely independent of any desired wage outcome, in practice it is commonly associated with what is close to a golden rule for wage determination: wages should rise in line with productivity. There is a presumption that "balanced" collective bargaining will tend to produce this outcome, and that such an outcome is socially just and efficient.

Liberal and anti-communist ideologies have also contributed to the widespread avowal, if not adoption, of collective bargaining as a wage-determination process. The ILO, AID and AIFLD[13] have reinforced these ideologies through recommendations, training programs and financial support for noncommunist unions.[14] These ideologies have generated support for pro-labour policies that consist of institutional reinforcement, but they have inhibited wage planning and direct wage determination by government.

Few governments do not officially subscribe to the principle of collective bargaining as the desirable mode of wage-determination. In practice, however, a stress on collective bargaining remains a model or ideal for most LDCs. The rule is greater or lesser government involvement ranging from unaggressive participation in tripartite wage boards, to almost direct wage-setting through highly detailed regulations of most working conditions and strong pressures to force settlements and accept government mediation.

The former, or less government participation, is likely to characterize weaker governments, while the latter is found in countries with strong corporatist, nationalist ideologies. In weaker governments it is often harder to identify any dominant wage policy approach at all because competing groups simultaneously pursue different policies, most notoriously in inflationary settings: pro-labour factions obtain large wage increases while pro-business groups block price and profit controls. Government implementation of labour market rules and mediation in disputes may be highly erratic and inconsistent with regard to its bias. A natural political defence in such settings is to proclaim the ideological virtues of collective bargaining, and to allow the stronger market forces, by and large, to win out, despite the existence of official wage targets for stabilization and growth purposes.

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[13] These include AID and AFL-CIO supported labour institutes in each of the three major world regions, (the AIFLD (The American Institute for Free Labour Development) is for Latin America), devoted largely to the support of non-communist labour organizations in developing countries.

[14] D. Jackson, *op. cit.*, for instance, discusses the substantial budgetary support and training assistance provided to the anti-communist Turkish labour federation Turk-Is.

A strong preference for political stability, and therefore for industrial peace, has characterized governments with corporatist and national ideologies. The populist ideology of Kemal Ataturk, for instance, stressing absolute unity of the Turkish people, was accompanied by a rejection of class conflict and class-based organizations. His prohibition of unions and stress on public arbitration may be interpreted as a low-wage, rather than neutral, collective bargaining attitude, but the intention seems to have been strongly oriented to ensuring consensus rather than imposing a pro-business wage policy.[15]

Mexican wage policy during most of the period since 1910 has been similarly concerned with avoiding the political instability created by class conflict,[16] via the incorporation of labour into the ruling party power structure, and through a wage policy strongly guided by the ability to pay criterion.[17] A striking example of a corporatist attempt to eliminate class conflict through legislation on profit sharing and wage determination is provided by the recent Industrial and Social Property Laws of Peru. Publication of these laws was accompanied by explicit reference to the expected elimination of class conflict.[18]

The *third policy approach*, *favouring modern sector labour organization*, is a straightforward political strategy. I am not referring simply to vote-buying wage increases, but to the longer-run strategy aiming at eventual transfer of power to labour as a whole, a strategy which accepts the necessity and feasibility of beginning with the more easily organized and potentially powerful modern sector workers. The underlying presumption is that strengthening the political power of modern sector labour will indeed make possible a next step involving transfer of power to traditional sector workers.

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[15] D. Jackson, "The Political Economy of Collective Bargaining—The Case of Turkey", *British Journal of Industrial Relations*, Vol. IX, No. 1 (March 1971), p. 69. Ataturk's labour policy, embodied in the Labour Act of 1936, was reversed after the 1960 Revolution.

[16] See Roger D. Hansen, *The Politics of Mexican Development* (Baltimore: The John Hopkins Press, (1971), especially pp. 113–116. The main exception was the Aleman administration (1946–1952) which followed a deliberate low-wage policy.

[17] *Ibid.*, p. 92. This policy was made explicit by President Cardenas (1934–1940). See Joe C. Ashby, *Organized Labour and the Mexican Revolution under Cardenas* (Chapel Hill: University of North Carolina Press, 1963).

[18] See President Velasco's *Message to the Nation* of July 28, 1971.

A paradoxical result is that political groups on the left, who are presumably most concerned with equity, find themselves defending measures that favour modern sector workers and which are likely to hurt the very poor, at least pending the day that a revolutionary transfer of power becomes possible. Another implication of this approach is that, if successful, it is self-liquidating: once a socialist regime has been established, the goals of equity and rapid growth take precedence, and they necessarily require the retraction of privileges previously given to modern sector labour.

A common pattern in many developing countries has consisted of a switch from an early, largely politically motivated support for labour to greater emphasis on an incomes policy and on wage restraint. This was noted, for instance, by Arthur Lewis, who wrote that "Recognition of the connection between wages and employment has opened up a gulf between trade-union leaders and political leaders in new states, especially where the government is the chief employer of labour, or is concerned about the adverse effects of high wages on exports, import-substitution and employment, or even prefers high profits to high wages because it can tax profits more easily than wages. Governments have therefore begun to think in terms of an income policy."[19]

The above discussion has treated wage policy formulation as if it were guided solely by long-run economic and political objectives. To a considerable extent, however, wage policy has been the product of short-run stabilization needs. Continuing instability has converted successive short-run wage targets into the ex post long-run wage policy. The standard wage prescriptions of stabilization programs are wage restraint and the golden rule, i.e., wage gains limited to productivity increases. Stabilization goals of themselves, however, have rarely been the basis for the imposition of a long-run low-wage policy. For one thing, the belt-tightening required by stabilization programs is generally sold by alleging a relatively balanced or equitable contraction of incomes; this opens the way to prompt readjustments when wages fall too far behind other incomes. Also, the recessions that often accompany stabilization efforts create an incentive to raise wages as a quick way to increase aggregate demand. In Chile and Argentina, such readjustments have accompanied the continuing and cyclical course of inflation over the last two to three decades. In the second place, stabilization targets commonly enshrine the "wage increases equal to productivity gains" rule which runs counter to the stricter rules of a low-wage policy. Stabilization income targets therefore tend to produce long-run wage outcomes similar to those of a smooth-running collective bargaining machinery, despite sharp, short-run fluctuations in real wages.

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[19] Arthur Lewis, "A Review of Economic Development", *AER*, Vol. LV, No. 2 (May 1965), p. 15.

The basic wage policy alternatives described above are complicated in practice by other considerations. The standard growth and employment argument for low wages, for example, has at times been challenged by the "need for a large internal market" argument. One form of this argument is that which asserts that consumption by profit recipients has a higher import and capital content and, therefore, that a redistribution of income to wage-earners will lessen pressure of the foreign exchange and capital constraints, thereby permitting faster growth.[20] This view reinforced the redistributive intent of wage and price policies of the Allende regime during 1970–1971. So drastic a redistribution would not have been attempted on political or equity grounds alone: they were supported by a conviction that wage gains would accelerate industrial growth.[21] The internal market argument, along with preventive politics, has also been cited as a factor in the switch in South African wage policy for Black wage-earners. After a deliberate policy decision in 1957, the Wage Board began to enforce wage readjustments that led to an average 2–3 per cent annual increase in real wages between 1957–58 to 1966, though wages for Whites have been rising even faster.[22] A similar mix of preventive political relaxation, with a concern for an adequate domestic market may have contributed to the relaxation of the severe low-wage policy followed in Brazil between 1964 and 1968–1969.

Another basic element in the choice of wage policies concerns minimum wages. The general acceptance of non-intervention in labour markets is reversed with reference to minimum wages: the state is commonly expected, and often constitutionally required[23] to ensure that its citizens at least survive. Over the last two decades minimum wage legislation has become generalized, though only recently in many countries: thus, the first national minimum wage laws in Peru were legislated during 1964–65; in Honduras a general system of minimum wages was established only this year. The issue regarding minimum wages has become less their existence than their level, and, particularly, the extent of adaptation to existing regional-sectoral wage differentials. Considerable adaptation, which amounts to acceptance of a capacity to pay criterion, is the rule; less frequent is imposition of uniform "need" based rates either nationally or for broadly defined regions. In India, for instance, despite an egalitarian orientation and the constitutional requirement of a "living wage", the Supreme Court has repeatedly upheld the principle of regional-sectoral differentials in minimum wage rates and the resulting differentials appear to exceed regional cost of living variations.[24]

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[20] See Celso Furtado, *Subdesenvolvimiento e Estagnacao Na America Latina* (Rio de Janeiro: Editora Saga, 1968), p. 81. Furtado's argument, culled from several publications, is favourably reviewed by Werner Baer, "Furtado on Development: A Review Essay", *Journal of Developing Areas* (Jan. 1969), pp. 270–280. This argument also underlies several empirical studies undertaken as part of the Rice University Program of Development Studies project on income distribution. See James Land and Ronald Soligo, *Models of Development Incorporating Distribution Aspects*, Paper No. 22, Program of Development Studies, Rice University. See also the ILO Report on Colombia, *Towards Full Employment* (Geneva, 1970).

[21] See, for instance, *Plan Anual 1971*, ODEPLAN (Santiago, 1970), p. 17, "La concepcion general del Plan . . . se expresa en lo immediato en una fuerte redistribucion de ingresos a favor de los asalariados . . . Esta redistribucion de ingreso se traducira en un sustancial aumento de la demanda y, por ende, en un fuerte estimulo al aparato productivo, hasta ahora muy deprimido y subutilizado. Por este mismo hecho, se cuenta con la necesaria capacidad de respuesta a las nuevos condiciones, asi como tambien existe un vasto contingenete de fuerza de trabajo susceptible de ser empleados productivamente."

This expression of faith in the short-run elasticity of aggregate supply is supported by a broader argument that inequality is a growth bottleneck, expounded for instance in Pedro Vuskovic, "Distribucion del Ingreso y opciones de desarrollo", *Cuadernas de la Realidad Nacional* No. 5 (Sept. 1970), pp. 41–60. Vuskovic was Allende's first Minister of Economy (1970 to mid 1972) and is considered the chief architect of Allende's economic policy.

Immediate distributive considerations are necessarily in the forefront of day-to-day decisions regarding wage claims. Governments directly affect the income distribution each time they legislate or decree wage rates or benefits, or mediate in disputes, or refuse to mediate. Yet the choice between the major alternative wage policies that underlie daily decisions appears to be much less a statement of distributive preference than a response to other, often more pressing economic and political goals. Since growth is the primary concern of many, if not most of those governments (on both the left and the right) that are not entirely absorbed in day-to-day political survival, it seems fortunate that a low-wage policy appears to be best for both growth and poverty reduction. However, where equity is not a major objective of the low-wage policy, other necessary conditions for achieving both rapid and labour-absorbing growth may not be met,[25] in which case low wages will hurt the poor in both the short and long run.

Likewise, redistribution is not the primary consideration leading governments to stress collective bargaining as a wage policy, or even to

[22] D. Pursell, "Bantu Real Wages and Employment Opportunities", *South African Journal of Economics* (June 1968), pp. 87–103.

Arnt Spandau later questioned Pursell's interpretation of Bantu wage policy, but did not deny nor provide alternative explanations of, the wage increases cited by Pursell. A. Spandau, "South African Wage Board Policy: An Alternative Interpretation", *South African Journal of Economics*, Vol. 40, No. 4, (Dec. 1962) pp. 377–387.

[23] Cf. the Indian Constitution cited in C. K. Johri, *Issues in Indian Labour Policy*, Shri Ram Centre for Industrial Relations (New Delhi: New India Press, 1969), p. 42. Article 43 of the Directive Principles of the Constitution requires the state to secure a "living" wage to workers [my italics].

[24] *Ibid.*, p. 15.

[25] It can be argued, for instance, that Brazilian style growth, combining low wages with capital-cheapening policies is not the best distributive alternative. The ILO argues that this has been the case in the Philippines.

adopt pro-labour policies when those measures are limited to modern sector wage-earners. In both cases, the objectives are more immediate and are primarily political. Moreover, both, in practice, discriminate in favour of modern sector labour, either deliberately, or indirectly by rigging the market in such a way that wage rates are strongly influenced by capacity to pay. These implications of wage policy choices are developed in the sections on policy implementation and policy impact.

## III. Policy Implementation and Market Structures

The distributive impact of wage policy depends as much on the manner in which it is implemented as on the basic direction of policy. Furthermore, policy acts on, and through an economic structure. This section will discuss some characteristics, first, of wage policy implementation, and second, of labour markets, that have a bearing on how policies affect wages.

1. *Policy Implementation* The distance between laws and implementation is often great.[26] However, this gap is not a measure of frustration between policy intent and achievement. In the first place, ambitious legal targets are commonly in advance of expected and even intended short- and medium-run implementation: . . . "The function of the written law in some of the Latin American countries is sometimes more educational than normative."[27] More importantly, legal comprehensiveness and complexity combined with traditions of weak judiciaries and of greater state involvement in wage-determination, gives executives more opportunity for discriminatory application of the law. "Labour law in (Latin America) is extremely complex and regulates virtually every aspect of worker activity. For administrative and political reasons, its provisions are often selectively or arbitrarily applied."[28] The institutional and legal frameworks, inherited by a particular regime (be they defensive or supressive of labour), are thus less of a constraint on current preferences. An illustration of the strength of administrative action vis-à-vis the law is seen in the growth of the labour movement in Colombia under President Alfonso Lopez (1934–38). ". . . the growth of unionism after 1931 . . . is not the result of legislative recognition of the right of labourers to organize Colombia. Rather, the development of the labour movement in this period can be accredited, in large measure, to the informal support which the executive branch of the government gave unionism and to the manner in which that executive

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[26] "The desire for legal perfection which is so strong in Latin America sometimes leads to a situation where the law is in advance of the real economic and social situation. . . ." *International Labour Review*, Oct. 1961, pp. 269–291.

[27] *Ibid.*, Oct. 1961, pp. 269–291.

[28] Kenneth P. Erickson, Patrick Peppe, Hobart Spalding, "Research on the Urban Working Class and Organized Labour in Argentina, Brazi land Chile: What is Left to be Done?" *Latin American Research Review*, Vol. IX, No. 2 (Summer 1974), p. 127.

interpreted the law . . . For example, the government mediation of labour-management disputes often consisted of executive pressure on companies to bargain and give concessions, and the initiative for the creation of unions often came directly from the labour office."[29]

Inflation may be another source of wage policy flexibility in developing countries. Certainly real wages often move sharply over short periods. Even in Chile, with its long experience of continuous inflation, annual growth in real wages between 1960 and 1970 ranged from −8.7% (1963–63) to +15.5% (1966–67).[30] This is not proof that *permanent* adjustments are more easily made under inflation, but it suggests that, at least, inflation makes it easier to put a foot in the door when a permanent redistribution is intended as in Brazil after 1964. A contrary argument, however, is that inflation raises awareness of distributive gains and losses caused by price and wage movements, and increases pressure on the state to intervene in defence of group interests. As a result, the government may lose some of its power to pursue either a given wage target, or a collective bargaining "hands off" wage strategy.

A second characteristic of policy implementation concerns coverage. This point ties in closely with the dual nature of labour markets, discussed below, and it may be considered a special case of the laws vs. practice point. It is notorious that the degree of enforcement of labour laws is much higher in large firms, and in urban areas. This is true over and above the frequent legal discrimination between large and small firms: thus unionization is usually restricted to some cut-off firm size.[31] Labour inspectorates appear to be administrative Cinderellas relegated by both low-wage and pro-labour regimes, since the latter concentrate on either major wage agreements or on the creation of new unions, rather than on policing existing legislation. Despite its advanced labour legislation, the Chilean Labour Inspection Department in 1966 had only one vehicle, and a staff that could scarcely cope with routine inspections.[32] And despite the authoritarian regime of Guatemala, it is widely believed in that country that labour inspectors can venture into many rural areas only at the risk of their lives. Two possible measures of the degree of discrimination in the enforcement of wage laws against workers in small firms, and against farmworkers in general, would be first, the number of small-firm workers receiving less than the minimum wage, and second, the proportion of the rural labour force that legally could be, but is not unionized.

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[29] Miguel Urrutia, *The Development of the Colombian Labour Movement* (New Haven: Yale University Press, 1969), pp. 118–119.

[30] Ricardo French-Davis, *Politicas Economics en Chile* (Santiago: Ediciones Nueva Universidad, Universidad Catolico de Chile, 1973), p. 345.

[31] In Peru, for instance, the minimum size firm for creation of a plant union, in 1970, was 20 employees.

[32] Alan Angell, *Politics and the Labour Movement in Chile* (London: Oxford University Press, 1972), p. 80.

The substantial discrimination that generally characterizes enforcement of labour laws cannot be entirely attributed to the nature of implementation. Discriminatory enforcement has two components: one is indeed a departure from the announced or legislated policy intent that can be explained in part as an administrative failure, but mostly as an accommodation to differential feasibility of enforcement, since laws and administrative systems rarely admit or provide for the differential costs of enforcement. A second, and perhaps major component of discriminatory enforcement, however, cannot really be called a "slippage" at the level of implementation but is rather a deliberate administrative expression of a wage policy that wishes to give due allowance to the capacity to pay. In other words, to a large extent, enforcement is not intended for much of the small-scale and rural sector, despite the all-embracing language of legislation. This blurs the distinction between policy choice and its implementation, but there is surely an element of both administrative bias or slippage in enforcement, and unwritten discriminatory intent in policy as it is implemented.[33]

This distinction is not academic. To the extent that discriminatory enforcement is really unwritten policy (i.e., there is a majority consensus within government on its desirability or necessity given market or administrative constraints) then a change in policy output, e.g., more widespread enforcement of minimum wage laws, would require more than reprimands and/or additional budgetary support for labour inspectors. It requires a change in policy. One of the first acts of recently elected President Lopez Michelson of Colombia, for instance, was to suspend a majority of the government's labour inspectors on the grounds that the widespread payment of wages below the legal minimum was prima facie evidence of supervisory failure.[34] I suspect that if tighter supervision now becomes the rule, it would amount to a change in policy, requiring therefore substantial support within the Lopez government, rather than a simple administrative improvement. Of course, such a change in policy requires also that broader supervision is not offset by a more discriminatory evolution of the structure of minimum rates, i.e., by the extent to which the previous unwritten law becomes written law.

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[33] The Indian Fourth National Seminar on Industrial Relations in a Developing Economy, when grappling with the problem of minimum wage fixing for the unorganized sector recorded a unanimous objection to use of the capacity to pay criterion, ''Industries that could not afford to pay the minimum wages had no right to exist.'' (Johri, *op. cit.*, p. 44). At the same time, though, the Seminar endorsed discrimination on a broader scale, by favouring differential rates on an industry-cum-region basis. Also, the differential enforcement within the traditional sector of Factories Act provisions was accepted as inevitable: some argued for more uniform implementation while others for separate legislation. (Johri, *op. cit.*, p. 16).

[34] Reported in *Latin America*, a weekly newsletter published in London, Vol. VIII, No. 35, Aug. 1974.

2. *Market Structure*—Market structures in developing countries impose two substantial constraints on wage policies: first, they severely limit the reach of such policies; and, second, they create upward wage pressures within modern sectors.

(a) *Coverage of wage policies*—The redistributive potential of wage policies is limited firstly by the relatively large self-employed component of the labour force. Table 1 below shows that in most developing countries

## TABLE 1

### STRUCTURE OF LABOUR FORCE[a] IN SOME DEVELOPING COUNTRIES

(as per cent of total labour force)

| Country | Census year[b] (1) | Total employees (2) | Non-farm employees (3) | Modern sector employees[c] (4) |
|---|---|---|---|---|
| Argentina | 1960 | 70 | 61 | |
| Uruguay | 1963 | 71 | 61 | |
| Chile | 1970 (1960) | 70 (73) | 57 (54) | (27) |
| Venezuela | 1961 | 61 | 50 | 28 |
| China (Taiwan) | 1966 (1956) | 53 (37) | 50 (31) | |
| Brazil | 1970 | 55 | 43 | |
| Mexico | 1970 (1960) | 62 (64) | 43 (35) | |
| Panama | 1960 | 48 | 40 | 21 |
| Costa Rica | 1963 | 66 | 40 | |
| Colombia | 1964 | 57 | 37 | 18 |
| Iran | 1966 | 48 | 37 | 16 |
| Ceylon | 1963 | 65 | 36 | |
| Egypt | 1966 (1960) | 54 (49) | 34 (30) | (20) |
| Algeria | 1966 | 68 | 33 | |
| Peru | 1961 | 48 | 32 | 18 |
| Iran | 1956 | 46 | 30 | |
| W. Malaysia | 1957 | 56 | 30 | |
| Korea | 1966 (1960) | 32 (22) | 27 (18) | 16 |
| Ecuador | 1962 | 47 | 26 | |
| Morocco | 1960 | 38 | 25 | |
| Philippines | 1960 | 29 | 22 | |
| Indonesia | 1971 | 32 | 17 | |
| Ghana | 1960 | 21 | 15 | 8 |
| India | 1971 (1961) | 17 (30)[d] | 16 (12) | (6) |
| Turkey | 1960 | 19 | 14 | 6 |

TABLE 1 (Contd.)

| Country | Census year[b] | Total employees | Non-farm employees | Modern sector employees[c] |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Thailand | 1970 (1960) | 13 (12) | 11 (9) | (5) |
| Pakistan | 1961 | 20 | 10 | |
| Nepal | 1961 | 16 | 3 | |

[a] Unemployed and persons seeking first employment were subtracted from labour force totals in most countries.

[b] Bracketed figures correspond to the earlier census.

[c] The basic criterion for "modern sector" status was size of firm. Since size was not known in many cases, common sense approximations were used. Thus, non-agricultural employees from column 3 were broken down by broad industrial category (ISIC 1–9). The employees in each category were then classified as modern or traditional using the following methodology:

ISIC 1: mining: all modern; ISIC 2–3: manufacturing: modern = employees in enterprises above a given size (this was usually 5 or 10 workers, but for India it was 20 for industries not using power, for Ghana it was 30, and for Venezuela it was the reporting firms); ISIC 4: construction: all traditional; ISIC 5: electricity, gas, water and sanitary services: all modern; ISIC 6: commerce: 20% modern, 80% traditional; ISIC 7: transport storage and communication: 80% modern, 20% traditional; ISIC 8: services: government = all modern, domestic servants = all traditional, the remaining portion of services was then distributed 1/3 modern, 2/3 traditional; ISIC 9: activities not adequately described: 50% modern, 50% traditional. In addition, persons in ISCO major groups 0–2 (professional, technical and related workers, administrative, executive and managerial workers, and clerical workers) who were classified as employees, own account, family workers, or others (i.e., the non-salaried or wage-earners status category) were added to the wage-earners since they were considered modern sector. In most countries this increased the modern sector size by 1 or 2 percentage points.

Construction workers are not easy to classify; most are low-skilled; many workers in large firms or projects but have high turnover. In some countries however (e.g. Peru), they have as much political and union clout as factory workers, perhaps because the practice of cost-plus contracting in public construction projects made government interventions in wage-setting an early necessity. Once identified as the direct wage-setter, the government is politically more vulnerable to wage demands; and "minimum profitability" cannot be used as a defence against large wage demands. This also applies where cost-plus pricing is common in much of private sector construction.

[d] The number in parentheses is the percentage share of employees in the EAP if 31 million persons classified as agricultural labourers in the status "other" and "unknown" are added to the 2 million agricultural workers classified as wage-earners.

*Sources*: Columns (1)–(3): *International Labour Organization Yearbook of Labour Statistics* 1966, 1971 and 1972, Geneva.

Column (4): (a) Data on employees in manufacturing by size of firm was from U.N. Statistical Office. *The Growth of World Industry 1970 Edition*: *Vol. I*: *General Industrial Statistics*, New York: U.N. 1972, except for Venezuela which was from Venezuela . . . . Direction General de Estadistics y Censos, *Anuario Estadistico 1971*, Caracas, 1973.

(b) Data on government and domestic employees was directly from the censuses of the respective countries except for Egypt where an estimate made by Doctor and Gallis "Size Characteristics of Wage Employment in Africa: Some Statistical Estimates", *International Labour Review*, Vol. 93, #2 (February 1966), p. 170, was used.

the self-employed make up about half or more of the active population. The share of employees in the total labour force is lower in the poorer countries and tends to rise as countries develop. Wage policies can obviously benefit or hurt the self-employed indirectly, chiefly through modern sector employment and growth effects,[35] but the potential redistributive impact of wage policies on the self-employed is comparatively slow, small, and one-sided in that they more easily hurt than help the self-employed.

In practice, however, the relevant limitation on coverage is the size of the urban and modern component of the wage-earning sector, i.e., firms where wages and working conditions can in fact be controlled. The enforceability of pro-labour policies declines rapidly with size of firm, and is lower in rural than in urban areas. In agriculture, the size threshold of enforceability is a much larger firm than in the urban sector and is enormously complicated by the prevalence of seasonal employment, "piece rates", particularly in harvesting, and pay in kind. The threshold of enforceability will vary with the government's administrative effectiveness, and with the particular instrument involved, e.g., minimum wages are more broadly enforced than compulsory pension schemes. Finally, the degree of unionization, and particularly the strength of industrial or occupational rather than enterprise unions will also affect the margin of enforcement. Nevertheless, the major determinants of enforceability are size and urban presence.

For the bulk of that large class of employees working in small, labour-intensive, and more mobile establishments, a majority of whom live in small towns or rural areas, pro-labour wage policies are not enforced. The illusion of enforcement is often created by minimum wage systems that discriminate closely by industry and region and that in practice essentially ratify market wages. Minimum wage systems, or other pro-labour laws that attempt significant departures from market wages can usually be enforced only in the modern sector. As may be seen from data provided in Table 1, attempts to redistribute via wage policies will, therefore, usually reach no more than 10 to 20 per cent of the labour force.[36] Furthermore, the redistributive potential of labour policies also depends on the size of the "surplus" or non-labour income share. Since surplus per worker is larger in urban and modern sector firms, capacity to pay is closely correlated with enforceability. Thus, the enforcement of wage increases in most rural or urban traditional sector firms would not only be costly in administrative terms, it would also have a smaller redistributive impact given the lower surplus per worker and the fact that many employers in those sectors are themselves poor.

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[35] See papers by H. Bruton, and C. Frank and R. Webb in this volume.

[36] From the sample of twelve countries for which estimates were made of the size of the modern sector labour force, a rule of thumb can be formulated that modern sector employees will equal about half of total non-farm employees. For all but one of the countries (Egypt) the proportion was between 43 and 59 per cent.

(b) *Links between implementation and market structure*—The link between enforceability and market structure has two components. The more obvious component was referred to above; it amounts largely to visibility and accessibility—features inherent to modern sector firms because they tend to be large, to locate in cities or along major transport facilities, and (every cloud has its silver lining) to advertise blatantly.

The second link, however, is of a more general nature and is less obviously related to the modern-traditional sector dichotomy. Any policy attempt to distort a market outcome will create some degree of disequilibrium or "tension". The amount of tension is determined by market conditions, and is itself a determinant of the degree of political administrative effort required for implementation.

More specifically, the degree of market tension will be a function of the supply and demand elasticities in each labour market: the greater the elasticities, the larger will be the disequilibrium resulting from a given departure from a market wage, and, hence, the stronger the market forces working against government policy. Thus, if labour supply is highly elastic, any wage above the free-market level will generate a large number of job-seekers; and any wage below could be implemented only by somehow forcing a large number of potential job-leavers to remain at work. If the demand for labour is elastic, a wage above the free-market level will cause a large reduction in employment and a greater disruption or readjustment in the structure of production.

Tension also results when government attempts to change the underlying supply and demand conditions of markets. A major part of wage policy, for instance, is directed at either increasing or reducing the competitiveness of labour supply, chiefly by measures that weaken or strengthen unions. The amount of effort required to implement such measures will depend on the structural characteristics that underlie market supply conditions, such as the skill homogeneity of the labour force, its regional concentration or dispersion, its education, and other social characteristics that affect both market knowledge and ease of organization.

As a general rule, the tension created by a given policy-distortion of wage levels is smaller in the modern than in the traditional sector. This is because the elasticity of demand for labour tends to be lower, and because labour supply conditions are more easily effected in the modern sector, e.g., unionization is easier, and job stability laws are more easily enforced. These arguments imply that wage policy is more easily implemented in the modern sector for two kinds of reasons—the greater visibility and accessibility of modern sector firms, and the lesser tension created by market distortion in that sector.

(*c*) *The law of rising (modern sector) wages*—One of the most frequently repeated empirical generalizations regarding developing countries is that modern sector real wages are rising more rapidly than (i) traditional sector incomes, and (ii) in most cases, than GDP per capita. The phenomenon flies in the face of the orthodox conception of the underdeveloped country as a labour surplus economy with relatively competitive labour markets. The contradiction is most often attributed to unionization and political power of modern sector labour.[37] An alternative and complementary explanation involves the skill requirements of modern sector activities and the consequent skill upgrading of the modern labour force.[38] The search for a theory of rising modern sector wages is relevant to wage policy first, because a "competitive market" explanation (e.g., rising human capital) implies the absence of distortion. If skills largely explain high wages in the modern sector, there is no need to lower wages for efficiency purposes, while the reverse implication follows from the "market distortion" explanation.

Second, such a theory would reflect on the feasibility of wage policy, particularly of a low-wage policy: the ease of policy corrections will depend on the nature of the "distortions" or market forces involved.

My preferred point of departure is the generalization that upward wage pressures are created by features inherent to modern sector technology and market structure. This appears obvious with respect to the higher skill requirements of this sector. But it is also true of wage increases resulting from unionization and direct political power. The principal features of modern sectors are capital-intensity, large-scale units, urban presence, and rapid output growth.[39]

The skill effect on wage levels is the combined result of the need for new skills plus a structural constraint on the supply of those skills. Because such skills are largely learned on-the-job, their supply tends to lag behind the creation of new job positions. This kind of scarcity, and the resulting wage pressure, will be very sensitive to (i) the rate of growth, since slow expansion will allow skill supply to grow through some job turnover and deliberate on-the-job training of extra men; and (ii) the degree of structural change in sectoral output, since the expansion of the same activity will create a pool of each new skill and reduce the monopoly power of individual workers; and (iii) the absolute size of the market, since a large market will also tend to create pools of workers with the required or closely related modern sector skills that diminish the bargaining edge of each individual. Skill premiums of this type could be reduced by institutional arrangements that forced or induced firms to generate a larger supply of on-the-job trainees.

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[37] Thus, some discussions of wage differentials in urban markets distinguish principally between the "organized" and "unorganized" sectors, thereby *defining* the wage differentials in terms of degree of unionization.

[38] This view, stressing the role of skills, is argued by J. Ramos in *Labour and Development in Latin America* (New York: Columbia University Press, 1970); see especially pp. 174–178.

[39] A similar model of interaction of economic and political determinants of modern sector wage gains is suggested by H. A. Turner and D. A. S. Jackson: "In the model that best fits the data of this study, the major immediate determinant is institutional behaviour—the behaviour of employing and workers' organizations, and to some degree that of governments. On the other hand, the model is conditioned by certain characteristics of the economic system, and particularly by different rates of productivity growth between the economy's branches—which appear both as a factor facilitating wage inflation and as indicating a certain restraint upon it. So that here, economic and noneconomic factors interact, rather than oppose each other," in "On the Determination of the General Wage Level—A World Analysis; or Unlimited Labour Forever", *E.J.*, December 1970, p. 846, Vol. 80, No. 320.

Wage differentials may also result because the high fixed costs created by capital intensity put a premium on low worker turnover and on dependability. Capital-intensive firms therefore pay higher wages to reduce turnover, to be more discriminatory in their search for workers who rank high in personal characteristics associated with carefulness and dependability, and to elicit responsibility through good will. Such wage premiums, however, will only generate a *rising* relative wage in the modern sector if employment in the more capital-intensive component is growing as a proportion of total modern sector employment.

Modern sectors are also conducive to wage gains through unionization and direct political pressure. The opportunity for such gains is created by the high productivity and inelastic demand for labour, both of which are due largely to capital intensity. Elasticity of labour demand varies directly with the share of labour in total cost.[40] Also, capital-intensity usually implies a large rent or quasi-rent component in the return to property, partly because large-scale capital assets tend to be long-lived, and partly because modern sector assets in LDCs are often complementary with natural resources. Quasi-rent also arises from the monopoly element that is present in much LDC manufacturing and other activities as a result of tariffs, licenses and other such privileges.[41]

Modern sector characteristics, at the same time, facilitate the exploitation of such opportunities by labour: unions in LDCs usually originate in, and are often limited to modern sector establishments. Such firms tend to hire more experienced and better-schooled workers, concentrate them geographically—in a small number of establishments and in one, or few

[40] When wages rise, the demand for labour falls partly because capital and other factors are substituted for labour, and partly because costs rise and output falls. The negative output effect however is proportionate to the share of labour in total cost.

[41] Cf. R. Slighton, in "Perspective on Economic Policy-making", in Luigi Einaudi (editor), *Latin America in the 1970's*, Rand R-1067–DOS, December 1972, pp. 121–122. "Monopoly or partial monopoly positions in production arising from tariff protection and import controls create opportunities for labour to exact monopoly rents, and unions have not been backward in exploiting this opportunity."

cities—and provide them with an external environment of discipline and organization. Modern sector firms, in short, are natural breeding grounds for unions. This impact of modern, industrial forms of production on worker consciousness and organization was the basis of Marx's class analysis.[42] The same features of modern sector activity create direct political power, viz., urban presence, susceptibility to organization, and disruptive potential.

The processes underlying white-collar salary trends are somewhat different, on both supply and demand sides. As distinct from the largely market-determined supply of manual workers (which is either unskilled and highly elastic, or skilled and subject to supply-creation by the modern sector itself), the supply of white-collar labour is mostly a function of schooling, particularly secondary school output, and is, therefore, a direct result of policy. On the demand side, the market for white-collar employees is complicated by the existence of a massive single employer in the public sector—whose wage policy cannot be separated from consideration of other policy goals, principally in the area of fiscal policy, and of the major political force represented by public employees. Changes on the supply side, however, are likely to cause a cycle in salary trends: secondary schooling output is almost universally growing faster than modern sector employment opportunities, and are likely, therefore, to slow the growth of white-collar salary levels.

One major policy implication of these varied forces tending to raise modern sector wages is that a low-wage policy probably requires much more than a neutral attitude to competing income groups, it would seem to require active suppression of the natural political power and ease of unionization of modern sector labour, as well as an aggressive training and educational policy aimed at enlarging supply of both on-the-job trainees and secondary school leavers. A second implication is that the capacity to pay criterion, which implicitly underlies the collective bargaining approach to wage policy, tends to sanction and reinforce the dualism and income differentials between modern and traditional sectors.

## IV. Policy Impact

1. *Some issues*—The following is a not untypical evaluation of wage policy in developing countries: 'The reasons for the existence of wage levels, especially for unskilled labour, which are "too high", are mainly institutional. In some countries, and at certain periods, trade unions play some role. But the major factor is government policy, and the ideological or political ideas which guide it. Government is a major influence

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[42] "...with all the miseries it imposes upon (the workers), the present system simultaneously engenders the *material conditions* and the *social forms* necessary for an economical reconstruction of society", from Karl Marx, *Value, Price and Profit*, in *Karl Marx and Frederick Engel*, Vol. I (Moscow: Foreign Publishing House, 1962), p. 446.

on wage levels and structure in most LDCs, by its wage decisions with respect to government employees, and in its role as regulator through minimum wage policies, wage boards, Industrial Courts, etc.[43] In my opinion, wage policy is more diverse in intent, more indirect in form, and more constrained in practice than is suggested by that evaluation.

It is both statistically and conceptually difficult to separate the contributions of policy, unions and market structure. Today's market structure, and union strength are both partly the product of yesterday's policies. In this broader sense, much more can be attributed to policy. But today's wage decisions and mediation in wage disputes only rarely push wages very far above, or below their market (including union) determined level. This suggests that a policy reversal will be a slow and complex process because it must, in turn, unwind the fabric of protective labour and business laws that are now part of the market environment in most LDCs, and that largely explains wages that are "too high."[44]

Furthermore, though it is natural (or rather, professionally necessary) for an economist to treat policy as an exogenous variable, the resulting analytical procedure misses out the interrelation that exists between policy choice and economic structure, and is consequently unable to assess either the political feasibility, or the mix of political and economic changes required to implement a different policy. Once a protected sector of labour and business groups exists, how feasible is a policy of wage restraint? And how feasible is a policy that not merely restrains wages, but carries out other policies required for employment creation such as the dismantling of many forms of capital subsidy in the modern sector, and the transfer of income out of the modern sector to create capital and employment in the traditional sector.[45]

2. *Policy vs. market forces*—The literature on LDC wage policies contains some attempts to assess the separate contribution of government intervention on wage levels, chiefly in the modern sector. Berg[46], Turner and Jackson[47], and Frank[48], for instance, have stressed the role of active

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[43] Elliott Berg, "Wages, Policy and Employment in Less Developed Countries", Paper presented to Conference on Prospects for Employment Opportunities in the Nineteen Seventies, University of Cambrige, 1970, p. 5.

[44] Berg, *op. cit.*, defines "too high" as (a) higher than the wage needed to recruit new workers, (b) higher than the general level of incomes in the economy, and (c) higher than the marginal social opportunity cost of labour.

[45] The special problems with each "horizontal" or inter-sectoral transfer are discussed in Webb, *op. cit.*, pp. 25–29.

[46] Berg, *op. cit.*, p. 5.

[47] H. A. Turner and D. A. S. Jackson, "On the Determination of the General Wage Level—A World Analysis"; or "Unlimited Labour Forever", *E.J.* December 1970, pp. 827–49.

[48] Charles Frank, Jr., *Urban Unemployment and Economic Growth in Africa*, Paper No. 120, Yale Economic Growth Center, New Haven, 1968, pp. 262–65.

or permissive government wage and unionization policies in explaining sharp wage increases in the modern sectors of various African countries. On the other hand, Ramos[49] and Isbister[50] argue that in Mexico and other Latin American countries, market forces are responsible for most of the recent trends in modern sector wages. Isbister explains wage increases in Mexico by growing traditional sector productivity; Ramos argues that rising skill levels explain wage trends in Latin America. Ridker[51] also suggests that high modern sector wage levels are to a large extent caused by market rather than policy forces.

The source of modern sector wage increases was also discussed by Tidrick[52] and Eriksson[53] who measured the effect of these wage increases on employment, in Jamaica and Latin America respectively. Both authors begin by assuming autonomous wage increases and then study the wage effect on productivity and employment. Tidrick then argues that the reverse causation is possible but unlikely, given some features of his data. Eriksson is more agnostic, admitting that causation may run either way.

One attempt at a systematic measurement of the separate contribution of market and policy forces was made by Ramos, but his argument consists largely of providing detailed measures of labour quality, which, according to his figures, has been rising.[54] Though he considers this data sufficient to explain the observed wage increases, it does not rule out a parallel and significant contribution by government policy.

This issue was also dealt with, at some length, in a controversy following an article by Kilby,[55] who attributed wage increases in Nigeria to the political power of unions. Weeks, for example, argued that "wage levels in Nigeria have been basically determined by economic conditions, though superficially through political mechanisms."[56] Kilby's argument was supported by Warren[57] who stressed the political, rather than the direct collective bargaining power of unions, even though the resulting pro-labour policy was implemented through a "concessionary" attitude in wage negotiations. Knight makes a similar point regarding urban labour in Uganda.[58] This controversy suggests the awkwardness, and perhaps irrelevance of the original question ("market vs. policy?") since, like the scissors analogy for supply and demand, "the source" of the wage increase is clearly an interaction.

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[49] Joseph Ramos, *Labour and Development in Latin America* (New York: Columbia University Press, 1970).

[50] John Isbister, "Urban Wages and Employment in a Developing Economy: The Case of Mexico", *EDCC* October 1971, pp. 24–46.

[51] Ronald Ridker and Harold Lahel, *Employment and Unemployment Problems of the Near East and South East* (Delhi, Bombay: Vikas Publications, 1971).

[52] Gene Tidrick, *Wage Spillover and Unemployment in a Wage Gap Economy: The Jamaican Case*, Research Memo 47, Williams College, 1972.

[53] John Eriksson, *Wage Change and Employment Growth in Latin American Industry*, Research Memo 36, Williams College, June 1970.

[54] *Op. cit.*

[55] Peter Kilby, "Industrial Relations and Wage Determination: Failure of the Anglo-Saxon Model", *JDA*, I (July 1967), pp. 489–502.

[56] John F. Weeks, "Further Comment on the Kilby/Weeks Debate: An Empirical Rejoinder", *JDA*, Vol. 5, No. 2 (January 1971), pp. 165–174.

[57] W. M. Warren, "Urban Real Wages and the Nigerian Trade Union Movement, 1939–1960", *EDCC*, Vol. 1, No. 1 (October 1966), pp. 21–36.

Some other aspects of this discussion concern effectiveness of policy in raising wages through (a) welfare and supplementary benefits legislation, (b) minimum wage laws, and, (c) wage leadership. Thus a common theme in discussions of wage policy is that legislation regarding social security and supplementary benefits is a source of additional upward pressure on real wage levels.[59] Such benefits often add as much as 50% or more to the wage bill. It is plausible, however, that part if not all such benefits are eventually offset by smaller future increments in basic wages, though I have not found any study that examines this question.

The impact of minimum wages has been discussed more often in the context of the more backward African economies where unskilled and less organized workers make up a larger proportion of the wage-earning labour force, and consequently where minimum rates are both directly applicable to more workers, and are a powerful lever on the whole structure of rates. Several authors have cited minimum wages (along with government pay-scales) as a main source of the substantial increases in modern sector wage levels in these countries.[60] The impact of minimum wages in the more developed and differentiated labour markets of Latin America is probably less pronounced and limited to a small number of workers on the fringe of the modern sector. According to Berg,[61] the minimum rate is the effective rate for about half the workers in some African countries. But, survey evidence for Peru[62], for Mexico[63], and the recent statement by the President of Colombia[64], suggest that a large proportion of wage-earners in those countries receive less than the minimum, and most receive wages either above or below the minimum. On the other hand, Puerto Rico seems to have been a special case of considerable upward pressure on wages exerted through the minimum rates; wage policy thus dominated and overrode the potential contributions of either unions or rising skills.[65]

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[58] J. B. Knight, "The Determination of Wages and Salaries in Uganda", *Bulletin of Oxford Institute of Economics and Statistics*, Vol. 19 (October 1967), p. 250.

[59] Efren Cordova, "Labour Legislation and Latin American Development: A Preliminary Review", *International Labour Review*, Vol. 106, No. 5 (November 1972).

[60] e.g., E. Berg, "Wage Structures in Less-Developed Countries" in A. D. Smith (ed.) *Wage Policy Issues in Economic Development* (London: MacMillan, 1969), and C. Frank, *op. cit*.

[61] Berg, *op. cit*.

[62] Unpublished tabulations of 1969 national sample survey.

[63] Strassman, *op. cit*.

[64] Recent press statement by President Lopez reported to me verbally.

Existing labour force surveys for many countries could be used for a fuller study of the impact of minimum wages. A first set of questions would relate to coverage. What proportion of the labour force is in fact paid the minimum? How many, and who, fall below? What are the political, market, or administrative constraints that impede full coverage? A second set concerns the leverage effect of minimum rates, i.e., the extent to which increases in minimum rates also raise wages of higher-paid workers because wage differentials must be maintained for market reasons, or to satisfy union requirements. Presumably, leverage is proportional to the number of workers actually paid the minimum, which in turn is a function of the degree of skill differentiation, and of unionization.

The demonstration or pull effect of wage increases by "leading" sectors—chiefly the public sector or large foreign firms—on other modern wages has been cited[66] as a key wage increase mechanism, and one that presumably is particularly easy to reverse. As with minimum wages, the argument has been applied most particularly, and plausibly, to the smaller and less differentiated modern sectors of some African nations. If wage leadership is to explain rising *real* wages, however, it must explain who loses from the wage increase; the additional wage income may come out of modern sector profits, or taxes, or the traditional sector through relative price changes. All these mechanisms are plausible but an adequate explanation of the leadership mechanism must explain the particular mechanism by which real income is transferred, and therefore, why the wage increases do not simply result in general inflation.

3. *Wage and GDP per capita trends* Table 2 compares long-run manufacturing wage and GDP trends for a sample of developing countries. This comparison is offered as a very crude, possible indicator of countries following high and low wage policies over a relatively long period. It is more indicative of the impact of basic institutional "behind the scenes" policies towards labour and market structuees, than of the highly variable year-to-year fluctuations in wages caused chiefly by immediate political and stabilization goals.

There are a surprisingly large number of countries (half the sample!) where manufacturing wages have grown more slowly than GDP per capita. This does not, of course, imply income equalization, since the compensating faster growth in incomes may be accruing to capitalists, landlords or employees in the non-manufacturing sector, particularly in

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[65] Lloyd Reynolds, "Wages and Employment in a Labour-Surplus Economy", *AER*, Vol. LV (March 1965).

[66] Berg, *op. cit.*, p. 6; Knight, *op. cit.*

## TABLE 2

## TRENDS IN MANUFACTURING WAGES AND GDP PER CAPITA

(annual average changes in percentages)

| | (1) Real Wage (1956–1972) | (2) GDP per capita (1959–1971) | (3) Difference (1) – (2) |
|---|---|---|---|
| Tanzania | 9.4 | 2.2 | 7.0 |
| Nicaragua | 7.1 | 3.5 | 3.6 |
| Zambia | 6.5 | 3.1 | 3.4 |
| Colombia | 4.7 | 1.9 | 2.8 |
| Dominican Republic | 3.6 | 1.0 | 2.6 |
| Chile | 4.6 | 2.1 | 2.5 |
| Jamaica | (5.6) | (3.1) | (2.5) |
| Peru | 4.1 | 1.8 | 2.3 |
| Ecuador | 4.1 | 1.8 | 2.3 |
| Venezuela | (2.7) | (0.6) | (2.1) |
| Ghana | 1.4 | –0.1 | 1.5 |
| Ceylon | 3.1 | 2.1 | 1.0 |
| Panama | 5.5 | 4.7 | 0.8 |
| Egypt | (1.2) | (1.1) | (–0.1) |
| Mexico | 3.8 | 3.9 | –0.1 |
| Turkey | (3.5) | (4.0) | (–0.5) |
| Brazil | 2.3 | 3.1 | –0.8 |
| Pakistan | 1.0 | 2.2 | –1.2 |
| Guatemala | 1.8 | 2.1 | –1.5 |
| Burma | (0.4) | (2.0) | (–1.6) |
| Costa Rica | (0.5) | (2.2) | (–1.7) |
| Argentina | 0.5 | 2.6 | –2.1 |
| Taiwan | 3.2 | 5.7 | –2.5 |
| Korea | 4.2 | 6.7 | –2.5 |
| India | –1.3 | 1.5 | –2.8 |
| Philippines | –1.4 | 1.6 | (–3.0) |
| Thailand | (–2.6) | (5.3) | (–7.9) |

Notes: 1. Brackets indicate cases where data was available for short sub-periods only: the periods covered are given in notes to Table 2.

2. The dates shown in column headings indicate maximum period covered: in some cases (see Table 2), the periods are shorter.

3. The maximum periods for Column (1) and (2) do not match fully, but they overlap sufficiently to indicate the approximate relationship between manufacturing wages and GDP per capita.

*Sources:* Column (1): From Table 1, Appendix.

Column (2): OECD, *Latest Information on National Accounts*, No. 7, February, 1973.

government.[67] It could be argued that the per capita GDP is not the appropriate standard for comparison; if what is sought is an undistorted labour market, the appropriate comparison would normally be with rural wages. Nevertheless, the comparison with GDP is in itself surprising in that modern sector wage trends are commonly thought to exceed the income trends of all, or at least most other groups in society, and therefore, by definition, of GDP.

Another feature of Table 2 is that many countries with rapid wage growth are nevertheless in the category of what could be called "low wage policy" countries. The converse also holds true. At the same time, there is some correlation between the trends in manufacturing wage and GDP with an obvious suggestion that over the long-run market forces (and thus "capacity to pay") are a powerful determinant of real wage gains.[68] Finally, the more detailed time-period data of Appendix Tables A 1–3 reveal a considerable diversity of wage trends, including several cases of prolonged periods of falling real wages, even after short-period (four-year) variations are removed. This diversity conflicts with the commonly held impression that manufacturing wages are rising in a more uniform manner, and generally exceeding GDP growth.[69]

The following sections will briefly examine wage policies in the "high" and "low" wage trend categories as suggested by the country ranking of Table 2, to test the hypothesis that countries where growth in GDP per capita exceeded that in wages were indeed following low wage policies, and vice-versa.

4. *Cases of "low-wage trends"*—It is not surprising that most of the countries in the "low-wage trend" category (GDP growth exceeds wage increase) such as South Korea, Thailand, Taiwan, Guatemala, Pakistan, and Brazil (since 1964), had long periods of authoritarian and anti-union policies.

In other respects there is a diversity of policies and market structures. Brazil and the South Korea-Taiwan duo, for instance, are opposite paradigms: Brazil of dualistic growth, where capital subsidy and sectoral allocation policies reduce the potential employment and distributive effects of rapid growth, Taiwan and South Korea of balanced urban-rural, evenly distributed growth.[70] Indeed, in Taiwan and South Korea the task of wage repression must have been facilitated by a lesser degree of dualism: output is much less concentrated in a few large, urban, high productivity firms. The government's repression policies were thus faced with weaker market and organizational forces favouring wage increases. Much of this, of course, is circular: lesser dualism is to some extent (some say, *primarily*) a *result* of wage repression.

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[67] A distributive trend table, accounting for the gains or losses of different social groups, would be an extremely useful research tool for the analysis of wage and other distributive policies.

[68] This suggests another indicator of high or low-wage policies: the sign of the deviation from a regression line drawn between wage and GDP trends; and unless *total* modern sector wages can be obtained, the relationship could be drawn with industrial value added.

[69] Data presented by H. A. Turner and D. A. S. Jackson, for instance (in "On the Determination of the General Wage Level—A World Analysis; or 'Unlimited Labour Forever' ", *E.J.*, December 1970, pp. 827–849) strongly suggest such uniformity. This implication was criticized by J. B. Knight and Robert Mabro in "On the Determination . . . : A Comment", *E.J.*, Vol. 82, No. 326 (June 1972), pp. 677–686.

Wage repression in other countries, even when applied over relatively long periods, has been paralleled by capital-pricing, licensing and other policies that both subsidised capitalists, particularly in manufacturing, and contributed to more dualistic growth patterns. This policy mix has been most evident in Brazil,[71] but it also characterized the Philippines, as is argued in the recent ILO employment mission, as well as Pakistan during the decade of the sixties. In Guatemala and Thailand, wage-repression seems to have been the complement primarily of landlords—rather than urban capitalist-favouring policies, though tariff and capital-subsidy policies have also been favourable to the urban wealthy.

Other countries would seem to be in the group for very different reasons however: India in particular is a major political exception. The strongly egalitarian intent of the Indian Constitution certainly provides a basis for a tight rein on manufacturing wages, yet there is much in the institutions and principles of wage-determination in India that would lead one to expect wage trends strongly guided by capacity to pay, particularly the acceptance of collective bargaining or tripartism, the rejection of direct government intervention, and the approval of industry-cum-regional differentiation in minimum wage rates. Moreover, India is supposedly a "soft state", and has relatively strong regional governments which participate in wage-determination. Despite these characteristics, which preserve more democratic appearances, the wage-determination machinery in fact has managed to establish principles of strong central control, of wage restraint and egalitarian wage criteria.[72] Along with general wage restraint, there has been a sharp reduction in skill differentials. Some of the instruments that have achieved these results, for instance, are the centralization of the Labour Appellate Tribunals, the establishment of the industry-region, rather than individual firm, as the basis for determining the ceiling capacity to pay, and the involvement of independents in the Wage Boards, persons who generally lean conservatively towards consumers' and community interests.[73]

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[70] Though economists are beginning to question the degree of balanced growth in both S. Korea and Taiwan.

[71] Cf. "... policy as practiced became one of maximum wage containment", Albert Fishlow, "Some Reflections on Post-1964 Brazilian Economic Policy" in H. Jon Rosenbaum and William G. Tyler (eds.), *Contemporary Brazil: Issues in Economic and Political Development* (New York: Praeger, 1972), p. 86.

[72] See D. Jackson, "Wage Policy and Industrial Relations in India", *E.J.*, Vol. 82, No. 325, March 1972, pp. 183–194; and Myron Weiner, *The Politics of Scarcity: Public Pressure and Political Response in India*, U. of Chicago, 1962.

Argentina appears to have switched from being a classic case of redistributive pro-labour policies, under Peron, into the category of low-wage countries. Though the overall trend from 1954 to 1972 is a lag in manufacturing wages behind GDP per capita (0.5% vs. 2.6%), the story of wage policy over this period is complicated by numerous regime changes, by an overriding concern with stabilization problems, and by the powerful effect of external terms of trade on the internal distribution of income between urban wage-earners and farmers. The principal tools used to affect wage-outcomes involved direct price-setting on a highly aggregate scale—broad wage readjustments, exchange rate policy, and the rate of inflation; few changes were made in labour legislation, and the solid organization of labour unions went unchallenged. The net effect of these broad and continually shifting policy interventions was an initial and sharp post-Peron reduction in the wage share in national income from 46% in 1954 to 38% in 1959, followed by a burst of rapid growth, as real wages grew 8.4% p.a. from 1959 to 1965 while GDP per capita grew only 2.4%. The 1965 military coup then initiated a long stagnation and even slight decline as real wages fell 0.6% p.a. between 1964 and 1972 despite an annual growth of 3.2% in GDP per capita. The overall picture shows some correlation between wage trends and basic regime attitudes, but the extreme annual fluctuations of key variables, the major impact of external price developments—chiefly of wheat and beef—and the relative weakness of all governments during this period suggests that any conclusion regarding policy impact is somewhat speculative.

The difficulty of pinning down the impact of policy on wages can be further illustrated by the case of Brazil where there is strong prima facie evidence of wage repression: ever since 1968 for instance, wages have lagged well behind GDP per capita (2.3% vs. 3.1% p.a.), and government has been strongly suppressive of reformist ideologies and organizations. Most observers are categorical in describing policy as wage-repressive.[74] At the same time, however, it is argued that wage-repression was greatly facilitated by the corporatist history of the Brazilian labour movement. Control through corporatist arrangements over a long period of time suggests that the suppression of labour may have been less strong with regard to incomes than to class organization, and in fact, real wages have been growing rapidly since 1968. The rigor of wage-supression between

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[73] B. N. Datar and S. Mongia, "Industrial Awards in India", *Indian Economic Review*, 1954, p. 65.

[74] Lorenzo Juan Sigaut, *Acerca de la Distribucion y Niveles de Ingreso en la Argentina* (Buenos Aires, 1972).

1964–1968 was probably motivated in part by the large 1963–1964 increases dictated by Goulart, and by the priority of anti-inflationary policy over that period. The strong upward trend in wages since 1968 could be explained as a market response to very fast output growth, and/or as an easing of wage restraint in the interest of maintaining corporatist methods of labour control, particularly in the context of a highly dualistic economy and well-developed union structure where outright class suppression would face strong opposition. These possible explanations make it difficult to be categorical regarding the degree or order of magnitude of the impact of wage policy in Brazil, despite its stereotype as a wage-suppressive government.

5. *Cases of "high wage trends"*—As was expected from the analysis of earlier sections, countries with high rates of wage increase relative to GDP tend to be less authoritarian and to have relatively dualistic economies. These are the political and economic conditions that, on the one hand, motivate collective bargaining, "capacity to pay"-type wage policies, and on the other, provide the market structures where such policies can be used to good effect. More generalizations prove difficult.

If manufacturing wage-earners gained from policy in these countries, who lost? In countries with small modern sectors (e.g., Tanzania, Nicaragua, and Zambia), there was more leverage to finance wage increases by redistributing income from the traditional sector, via relative prices, or agricultural export taxes for instance. Yet in many of the high-wage trend countries, such as Colombia, Peru, and Chile, the traditional sectors were too small (e.g., under one-third of value added) to support, via such transfers, the large wage increases in the modern sector. Instead, wage gains must have been financed largely from capital income, or foregone taxes; where wage gains resulted chiefly from capacity-to-pay policies, there would have been little perception of "loss"—the wage gains would have appeared as a natural sharing in productivity increases.

Of the high-wage trend countries shown in Table 2—those for instance where real wage growth exceeded GDP per capita growth by over 2.0% p.a. only Tanzania could be described as a case of deliberately redistributive pro-modern sector wage policy. High wage trends in the other countries seem to be associated instead with consensus-type wage policies.

It is easy to find in the history of these countries, periods of rapid and others of slow wage change, often as a result of fluctuating inflation rates and stabilization programs. The capacity to pay orientation lends itself to greater flexibility of this type. Also, shifts in the political balance of power cause fluctuations around the basic permissive trend made possible by governments too weak to suppress unions, and by dualistic productivity differentials that are to some extent self-reinforcing rising wage costs induce greater capital intensity. In Peru, for instance, wage policy became markedly permissive—favouring the stronger organized sectors, such as miners—during the first two or three years following the 1968 military coup; the result was a marked acceleration in the growth of real wages. These increases were achieved directly through the government's participation in tripartite wage boards. At the same time, the government began a continuing effort to weaken union organization. These policies contrasted with the labour policies of the Belaunde government (1963–68). Belaunde's policies also involved a pro-labour influence in mediating disputes and enforcing labour legislation, but this influence was less pronounced than in the early years of the Velasco government; instead, Belaunde followed a mix of consensus and pro-labour organizational policies that permitted both steady differential wage increases in modern firms, and greatly expanded the extent of unionization, chiefly in modern agriculture.

A more dramatic case of deliberately redistributive wage policy was Chile's attempt at massive redistribution to labour under the Allende regime, particularly during 1971 when an exceptionally powerful attempt was made to raise wage levels and wage shares. The policy involved sharp increases in minimum wages, price controls, and easy access to credit to smaller and medium firms financially affected by the cost-price squeeze. Furthermore, acquiescence to wage increases was facilitated by the legally sanctioned threat of government "intervention" (i.e., take-over) in firms that failed to resolve labour disputes. The combined effect of these measures was a massive transfer of modern sector property income to labour during 1971: real wages that year rose 26%. The financial and productive implications of these measures, however, were untenable, and much of the redistribution was reversed, in part as deliberate policy, through the inflation of 1972–73. This rather erratic instance of an extreme pro-labour policy, like the longer-lived Peron experiment, is revealing of the mechanisms involved in implementation of the market response to such policies, and of the ultimate difficulty of achieving a permanent redistribution through such means.

An important feature of both the more aggressively pro-labour and the consensus wage policies is the way in which labour policy has accommodated to the existence of large differences in productivity levels, along with differences in political vulnerability, chiefly between foreign-owned and national firms. Government policy has accommodated to this differentiation by allowing company unions to become the principal negotiating units: industry-wide bargaining is the exception in most LDCs. The history and role of company unions in Colombia is stressed, for instance, by Urrutia.[75] Gregory[76] cites the role of plant unions in Chile; he argues that such unions weakened the labour movement, but this broad political result is not inconsistent with the achievement of differential wage gains correlated with productivity levels and changes between firms. Bargaining by company unions results in price discrimination by labour in the sense that firms with less elastic demand for labour curves can be forced to pay higher wages.

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[75] M. Urrutia, *op. cit.*

[76] Peter Gregory *Industrial Wages in Chile.*

Price discrimination by labour helps to explain the wide dispersion of wage rates even *within LDC modern sectors*, i.e., over and above the differentials between modern and traditional sector firms. Since productivity is closely correlated with capital-intensity, there is a correspondingly close relationship between wage levels and capital-labour ratios in firms. Gregory cites this correlation for Chile and evidence for Peru and Colombia is given by Webb[77] and Nelson, Schultz and Slighton[78] respectively. A striking example of wage variance closely parallel to productivity differences, and explainable largely in terms of price discrimination, is provided by eight large sugar estates in Peru. Data for 1968 show a similar *structure* of wages *within* each estate (reflecting differences in average productivity). Thus the average annual wage ranged from U.S. $ 713 to $ 1,643.[79]

A corollary of large productivity differentials is that unless government wage pressures are highly discriminatory, (rather than equal, absolute increases for all firms) they are likely to be unsustainable, because marginal, high-cost firms will be exceptionally hard hit, and many forced out. In practice, general wage increases involve equal *percentage* not absolute increases.

## V. Conclusions

The "high-wage policy" that allegedly characterizes LDCs, and that is routinely attacked in discussions of employment and equity, is a crude misrepresentation of wage policy in LDCs. Cases of straightforward redistributive pro-labour policies, such as the post-independence experience of several African countries, and the Peron period in Argentina, have been the exception. Wage-restraint and industrial consensus policies are more common features of LDC attitudes towards modern sector labour. Why then the common perception that governments favour modern sector wage increases? And why are such wage increases in fact so common?

The contrast between my description of policy intent—as being primarily repressive or neutral—and observed wage behaviour is caused by an interaction of economic structures and political aims that favour modern sector labour. These natural advantages of modern sector labour must either be actively checked, through repression or moral alternatives, or accommodated through consensus politics.

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[77] Webb, *op. cit.*

[78] Richard Nelson, T. P. Schultz, R. Slighton, *Structural Change in a Developing Economy* (Princeton: Princeton University Press, 1971).

[79] Santiago Roca *La Distribution del Ingreso en las Cooperativas Azucareras del Peru, 1968-72* (Lima: ESAN, 1973).

Perhaps the most frequent policy outcome is one which favours discriminatory wage increases that match differences in productivity growth. The "capacity to pay" criterion is a hardy plant, fed by political convenience, by the marketplace ideology, by notions of fairness, and by the economic opportunities of dualistic economies. This is a pessimistic conclusion with respect to the prospects of more equitable and employment-creating wage policies. The argument of this paper implies that calling for wage restraint is preaching to the converted, at least in most LDCs, and that modern sector wage restraint is an option open only to authoritarian governments. Finally, wage restraint does not guarantee favourable distributive effects. Authoritarian governments, particularly when dominated by urban business groups, and in economies that are already highly dualistic, may easily offset the potential employment-creation from lower wages through unfavourable capital subsidy and output mix policies. Recommendations regarding wage policy should therefore be fully aware of the different sets of economic policies that are normally associated with different political and market structures since consideration of both the feasibility and the desirability of a different wage policy for better income distribution will be a matter of comparing different sets of interrelated political and market settings.

## APPENDIX

### TABLE A1

### TRENDS IN REAL WAGES, 1956–72
(Average annual changes in percentage)

| | 1956–1960 (1) | 1960–1964 (2) | 1964–1968 (3) | 1968 1972 (4) |
|---|---|---|---|---|
| Argentina | −2.5 | 5.5 | −1.2 | −0.1 |
| Brazil | 0.3 | 2.5 | 0.5 | 7.6 |
| Chile | — | 1.6 | 9.2 | 5.5 |
| Colombia | 9.9 | 4.9 | 1.9 | −0.4 |
| Dominican Republic | 4.4 | 13.5 | −6.4 | 3.3 |
| Ecuador | 0.0 | 1.7 | 2.0 | 6.7 |
| Egypt | 0.3 | 5.4 | 0.6 | 0.0 |
| Ghana | 5.1 | −1.7 | 2.0 | 0.7 |
| Guatemala | 2.6 | 1.2 | 3.2 | −0.1 |

Table A1 (cont.)

| | 1956–1960 (1) | 1960–1964 (2) | 1964–1968 (3) | 1968–1972 (4) |
|---|---|---|---|---|
| India | −0.9 | −2.6 | −0.4 | 0.8 |
| Korea | 4.4 | −3.7 | 10.1 | 6.6 |
| Mexico | 2.4 | 8.6 | 2.3 | 1.6 |
| Nicaragua | 2.4 | 3.1 | 9.7 | — |
| Pakistan | −0.9 | 5.3 | −3.7 | 4.9 |
| Panama | 9.0 | 6.0 | 2.9 | 5.6 |
| Peru | 2.9 | 0.7 | −1.9 | 5.5 |
| Philippines | 0.5 | −4.5 | 0.3 | −1.7 |
| Puerto Rico | 6.6 | 4.0 | 3.7 | 3.1 |
| El Salvador | 5.6 | 0.2 | 2.9 | 1.5 |
| Sri Lanka | 9.9 | −0.8 | 1.4 | 1.4 |
| Syria | — | — | −0.9 | −0.8 |
| Tanzania | 6.8 | 18.2 | 4.9 | 4.0 |
| Thailand | — | — | −3.9 | −0.3 |
| Turkey | 1.6 | 1.6 | 5.7 | 2.5 |
| Venezuela | — | — | 3.7 | 1.8 |
| Zambia | 3.1 | 13.5 | 3.1 | 6.2 |

*Sources*: (1) 1956–64: Smith, Anthony D., ed., *Wage Policy Issues in Economic Development* (London: Macmillan, 1969), Table 2, p. 47 and International Labour Organization, *Yearbook of Labour Statistics* (1966 ed.).
(2) 1964–72: I.L.O., *Yearbook of Labour Statistics* (1973 ed.).

*Notes*: Actual periods covered are as follows:

Col. (1):
Ecuador 1957-60
Peru 1957-60
El Salvador 1956-59

Col. (2):
El Salvador 1961-64

Col. (3):
Brazil 1966-68
Korea 1965-68
Nicaragua 1964-67
Tanzania 1965-68
Turkey 1964-67

Col. (4):
Brazil 1968–70
Colombia 1968–70
Dominican Republic 1968-70
Egypt 1968–70
Ghana 1968–71
India 1968–70
Korea 1969–72
Pakistan 1968–70
Panama 1968–71
Philippines 1968–71
Tanzania 1968–70
Thailand 1968–70

## TABLE A2
## TRENDS IN REAL GDP PER CAPITA 1956–72

(average annual changes in percentages)

| | 1956–1960 (1) | 1960–1964 (2) | 1964–1968 (3) | 1968–1972 (4) |
|---|---|---|---|---|
| Argentina | 1.6 | 1.7 | 2.7 | 3.7 |
| Brazil | 3.3 | 2.1 | 2.6 | 6.1 |
| Chile | 0.3 | 2.3 | 1.9 | 2.9 |
| Colombia | 0.1 | 1.8 | 1.4 | 3.0 |
| Dominican Republic | 0.8 | 3.7 | −2.2 | 7.4 |
| Ecuador | 1.6 | 1.2 | — | — |
| Egypt | — | — | −0.2 | 3.9 |
| Ghana | — | 0.1 | −1.5 | 1.6 |
| Guatemala | 1.2 | 2.4 | 2.5 | 2.8 |
| India | 1.7 | 2.5 | −0.5 | 3.3 |
| Korea | 2.3 | 3.6 | 6.8 | 8.9 |
| Mexico | 2.3 | 3.8 | 3.3 | 3.6 |
| Nicaragua | 0.0 | 7.3 | 1.1 | 1.3 |
| Pakistan | 0.7 | 1.5 | 1.9 | −1.5 |
| Panama | — | 4.7 | 5.0 | 4.8 |
| Peru | 3.8 | 1.6 | 0.9 | 2.2 |
| Philippines | 0.5 | 1.3 | 1.0 | 2.8 |
| Puerto Rico | 6.4 | 6.2 | 5.6 | 5.0 |
| El Salvador | — | 3.3 | 1.6 | −0.3 |
| Sri Lanka | 2.0 | −0.5 | 2.6 | 2.9 |
| Syria | −5.0 | 7.0 | −0.9 | 6.0 |
| Tanzania | — | 1.2 | 3.5 | 1.7 |
| Thailand | 4.7 | 7.2 | 9.0 | 5.9 |
| Turkey | 0.2 | 1.9 | 3.7 | 3.8 |
| Venezuela | — | 4.1 | 0.9 | 1.3 |
| Zambia | — | 0.4 | 7.3 | 1.3 |

*Sources*: (1) 1956–60; U.N., *Statistical Yearbook*, 1966 edition, pp. 546–549.
(2) 1960–72, *Ibid.*, 1973 edition, pp. 549–552.

*Notes*: Actual periods covered are as follows:
Col. (4): Argentina 1968–71
Brazil 1968–70
Chile 1968–71
Dominican Republic 1968 –71
Egypt 1968–70
Ghana 1968–70
India 1968–70
Pakistan 1962–71—excluding Bangladesh
Panama 1968–71
Philippines 1968–70
El Salvador 1968–71
Sri Lanka 1968–71
Zambia 1968-70

## TABLE A3

## DIFFERENCE IN TRENDS IN MANUFACTURING WAGES AND GDP PER CAPITA

(average annual changes in percentages)

(Table A1 – Table A2)

| | 1956–1960 (1) | 1960–1964 (2) | 1964–1968 (3) | 1968–1972 (4) |
|---|---|---|---|---|
| Argentina | –4.1 | 3.8 | –3.9 | –3.8 |
| Brazil | –3.0 | 0.4 | –2.1 | 1.5 |
| Chile | — | –0.7 | 7.3 | 2.6 |
| Colombia | 9.8 | 3.1 | 0.5 | –3.4 |
| Dominican Republic | 3.6 | 9.8 | –4.3 | –4.1 |
| Ecuador | –1.6 | 0.5 | — | — |
| Egypt | — | — | 0.8 | –3.9 |
| Ghana | — | –1.8 | 3.5 | –0.9 |
| Guatemala | 1.4 | –1.2 | 0.7 | –2.9 |
| India | –2.6 | –5.1 | 0.1 | –2.5 |
| Korea | 2.1 | –7.3 | 3.3 | –2.3 |
| Mexico | 0.1 | 4.1 | –1.0 | –2.0 |
| Nicaragua | 2.4 | –4.2 | 8.6 | — |
| Pakistan | –1.6 | 3.8 | –5.6 | 6.4 |
| Panama | — | 1.3 | –2.1 | 0.8 |
| Peru | –0.9 | –0.9 | –2.8 | 3.3 |
| Philippines | 0.0 | –5.8 | –0.7 | –4.5 |
| Puerto Rico | 0.2 | –2.2 | –1.9 | –1.9 |
| El Salvador | — | –3.1 | 1.3 | 1.8 |
| Sri Lanka | 7.9 | –0.3 | –1.2 | –1.5 |
| Syria | — | — | 0.0 | –6.8 |
| Tanzania | — | 17.0 | 1.4 | 2.3 |
| Thailand | — | — | –12.9 | –6.2 |
| Turkey | 1.4 | –0.3 | 2.0 | –1.3 |
| Venezuela | — | — | 2.8 | 0.5 |
| Zambia | — | 13.1 | –4.2 | 4.9 |

*Sources:* Table A1 and Table A2.

*Notes:* (1) The dates shown in column headings indicate maximum period covered: in some cases (see notes Tables A1 and A2), the periods are shorter.

(2) The maximum periods from Tables A1 and A2 do not match fully, but they overlap sufficiently to indicate the approximate relationship between manufacturing wages and GDP per capita.

# ASIAN JOURNAL OF ECONOMICS AND SOCIAL STUDIES

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# EXPORT EXPANSION AND ECONOMIC GROWTH IN SOME ASIAN ECONOMIES: A SIMULTANEOUS-EQUATION MODEL*

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## I. The Relationship Between Export Expansion and Economic Growth

Export expansion as an engine of growth in both developed and developing economies has been widely discussed by economists since the early sixties. Kindleberger (11), Beckerman (3), and Lamfalussy (12) have attempted to provide some theoretical links between export expansion and economic growth, though none of them did actually formalize their arguments in the framework of growth models. Kindleberger argued that expanded exports offer investment opportunities and induce cost-reducing innovations and economies of large-scale production. In Beckerman's hypothesis, the prospects of expanded exports motivate entrepreneurs to increase their investment rates and therefore output and productivity. Lamfalussy, on the other hand, stressed the importance of the balance of payments position of a country; he maintained that the achievement of a surplus in the balance of payments as a result of expanded exports would enable the government to follow expansionist policies which encouraged domestic investment. It is in fact an easy matter to derive a theoretical link between export expansion and income growth on the basis of the Harrod Domar growth model. Ball (2) was among the first who attempted to extend the basic Harrod-Domar model to an open economy. Assuming a fixed proportions production function, constant proportion of saving and import in income, and exogenously given growth rates of export, Ball however arrived at a negative relationship between the rate of growth of income and the proportion of export in income. Further thoughts on this issue reveal that such rather unexpected results are due mainly to some unacceptable assumptions included in the above model. Firstly, the model assumes that investment has no imported component. This means that exports and domestic investment are essentially competitors for available saving. With the assumption that capital formation is the only source of growth in the Harrod-Domar model, a rise in exports will necessarily give rise to a fall in the rate of income growth. Furthermore, the above model has no reference to the balance of payments position and in fact implies that there is a perfectly elastic supply of international credit, with

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balance of payments deficits or surpluses capable of being accumulated indefinitely.

If we confine our arguments to developing economies, we can take into account the salient feature of the heavy reliance of capital goods on imports in developing economies. It can be shown that a framework based on an open Harrod-Domar model can in fact be used to derive more meaningful results when we assume that there is an imported component in investment. In detail, the model consists of the following equations:

$$dY = 1/v(I) \tag{1}$$

$$S = s \cdot Y \tag{2}$$

$$M = m \cdot Y \tag{3}$$

$$X = X_0 \cdot e^{xt} \tag{4}$$

$$I = b \cdot M' \tag{5}$$

$$I - S = M - X \tag{6}$$

where $Y$= income, $S$ = saving, $I$ = investment, $M$ = imports, $X$ = exports, $v$ = capital-output ratio, $s$ = marginal propensity to save, $m$ = marginal propensity to import, $x$ = exponential growth rate of export, $M'$ = imports of capital goods, and $b$ = reciprocal of the proportion of imported capital goods in total investment. Imports ($M$) are therefore composed of imported capital goods ($M'$) and imported consumer goods ($M''$). Assuming balance of trade, we have:

$$X = M = M' + M'' \tag{7}$$

or $$M' = X - M'' \tag{8}$$

The most important feature of this model is the division of imported goods into capital goods and consumer goods and that part of the investment cost is for imported capital goods. To establish a relationship between the rate of growth and the behaviour of exports, we first substitute (8) into (5) and then substitute the resulting equation into (1). The reduced form of our model becomes:[1]

$$\frac{dY}{Y} = \frac{b}{v}\left(\frac{X}{Y} - \frac{M''}{Y}\right) \tag{9}$$

Contrary to equation (7), equation (16) shows a positive relationship between the rate of growth and the proportion of exports in income. The intermediate links for such a positive relationship are as follows. An increase in exports helps to finance the import of capital goods, which in turn gives rise to a more rapid rate of capital formation and hence a higher rate of growth of output. Thus, this model postulates a link between exports and capital formation different from that suggested by Lamfalussy and Beckerman. This model does not rely on the "animal spirits" of the entrepreneurs or the expansionist policies in response to expanded exports, but merely on the assumption that part of investment cost is for imported capital goods. This export-led model at first sight bears a close resemblance to the well-known "two-gap" theory developed by Chenery and his associates (5,6,7). This is however only partly true. The "two-gap" theory in its simple form asserts that there is a minimum necessary additional amount of imports required to support a given increase in national output. At a certain projected level of output imports may exceed exports and very often the failure to achieve that level of output is not due to insufficient domestic saving but the lack of foreign exchange to finance the import-export gap which has then to be closed by foreign aid. It is true that our present model of export-led growth assigns an important role to imports (specifically capital goods imports) in the growth process. However we do not believe that a trade gap should exist and necessarily be dominant. The conventional "two-gap" analysis has largely overlooked the export potential of developing countries, especially the capability of developing countries in exporting manufactured products. If developing countries can expand their exports rapidly to generate sufficient earnings to finance imports, then there should not be any foreign exchange constraints on development. Thus in many cases where rapid development has failed to take place, one of the major reasons lies in their inward-looking policies based on their pessimistic view of export possibilities.[2] Thus, our model of export-led growth shares the view of the "two-gap" analysis in that imports, particularly capital goods imports, play a crucial part in the process of rapid growth, but on the other hand it stresses that such imports can be financed by expansion of exports, particularly manufacturing exports. This linking of exports to capital goods imports and the emphasis on the importance of the latter on output growth form the basis of our export-led model to be constructed and tested in the following sections. For the purpose of empirical testing, five fast-growing Asian economies, viz. Hong Kong, Japan, South Korea, Singapore, and Taiwan for the period 1955–1970 are selected for the study in this paper.

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[1] It can be seen that in equation (9) the saving rate ($s$) does not explicitly appear. In fact, in the present specification saving rate accommodates itself to the growth rate determined by equation (9). It changes over time as a function of $X/Y$. For a rigorous treatment, see R. Findlay (9).

## II. A Simultaneous-Equation Model of Export-Led Growth

In the literature, the crucial role of exports in economic growth has as a rule been demonstrated by the close association between income growth and export expansion. Such an association is sometimes shown by presenting statistics on the two sets of data on income and exports and sometimes more explicitly by a simple regression of income on exports.[3] This approach of measurement without theory of course suffers from the drawbacks of missing the important and interesting intermediate links which explain the export-led mechanism. More recently an attempt has been made to ascertain the intermediate links (which are very similar to those proposed in our model here) by performing simple regression analysis with reference to each of the links[4]. In such an analysis income is first regressed on exports to establish their positive relationship. Then simple regressions of capital goods imports on exports, investment on capital goods imports, and finally income on investment are performed. It is argued that if positive regression coefficients are found in these simple regressions then the hypothesized model of export-led growth can be established. It cannot be denied that such an attempt is already a great improvement over the previous studies which focus simply on the simple correlation coefficients between export and income. Unfortunately, this kind of study still can show only association and not causation. There are too many interdependencies involved for the causal links running from export expansion to income growth to be established by simple regression analysis. As a remedy to such defects, we propose a simple simultaneous-equation model encompassing the causal links of export-led growth described above. Our simultaneous-equation model consists of the following three equations:

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[2] For further discussion and some case studies, see I.M.D. Little *et al.* (14), chapter seven.

(1) The Income Equation:

$$Y = a_0 + a_1 I + a_2 X + a_3 Y_{-1} \tag{10}$$

or $$Y = a_0' + a_2' X + a_3' Y_{-1} \tag{10'}$$

where, $Y$, $I$, and $X$ are GNP, gross investment and total exports respectively; the subscript $-1$ signifies a one-year time lag of the variable it attaches to.

(2) The Capital Goods Import Equation:

$$M' = b_0 + b_1 Y + b_2 X + b_3 M'_{-1} \tag{11}$$

or $$M' = b_0' + b_2' X + b_3' M'_{-1} \tag{11'}$$

where $M'$ is the import of capital goods.

(3) The Investment Equation:

$$I = c_0 + c_1 M' + c_2 I_{-1} \tag{12}$$

In the above system of equations, $Y$, $M'$ and $I$ are endogenous variables and $Y_{-1}$, $X$, $M'_{-1}$ and $I_{-1}$ are exogenous variables. All the equations satisfy the rank and order conditions for identifiability. Both income and capital goods import equations have an alternative form which includes only exogenous variables as explanatory variables. It can be seen that our simple model hypothesizes that (1) income is related to both investment and exports or only to exports, (2) capital goods imports are related to both income and exports or only to exports, and (3) investment is related to capital goods imports. This model thus asserts that the role of export expansion in economic growth lies in its importance in financing capital goods imports which are necessary for rapid economic growth because of their significant effects on domestic investment. In view of the fact that the above hypothesized relationships must necessarily involve time lags, a specification of Nerlove's partial adjustment model of distributed lags is included in each of our equations.[5] In accordance with the Nerlove model, the time lag consideration is taken care of by the inclusion of the lagged dependent variable as an additional explanatory variable. In the Nerlove model, there is the advantage that all the lagged explanatory variables are meaningfully substituted for a single variable, the lagged dependent variable.[6] In addition, it has the advantage that the disturbance term has no direct connection with its own previous values, so that we may assume that the new error term is not autocorrelated.[7]

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[3] For cross-section studies, see R. F. Emery (8), R. Lubitz (15). For time-series studies, see A. Maizels (16), D. Healey (10).

[4] See C. S. Voivodas (18).

The model of export-led growth as specified by equations (10) or (10′), (11) or (18′), (12) is estimated with the data of the five economies under study by the two-stage least squares method. The choice between (10) and (10′), and between (11) and (11′) is based on statistical criteria. It is thought that investment may or may not have significant influence on the import of capital goods.

## III. Empirical Results

Table 1 reports the regression results of our simultaneous-equation model of export-led growth in the five economies under study. As the $R^2$ is not a good measure of goodness of fit in the simultaneous-equation context, only the standard errors of estimate (S.E.) are given in the resulting regression equations.[8] Also, we must note that the use of the usual Durbin-Watson statistic is not appropriate in the present situation where the estimation equations contain lagged dependent variables among the explanatory variables. In the present estimations of our export-led growth model, we use Burbin's recently devised h-statistic to test for serial correlation.[9] In all cases we find that we can accept the hypothesis of no serial correlation. Thus, from the statistical point of view, the results are very satisfactory as the standard errors are relatively low and the presence of serial correlation can be rejected in all cases. From the economic point of view, the results are very informative and interesting. In three cases, viz. Hong Kong, Korea and Singapore, the empirical results lend strong support to our hypothesized intermediate links in the export-led process. In these economies, income is very much dependent on export performance for the period under study, but in no case was the regression coefficient of I statistically significant though its inclusion still increases the good-of-fit in the income equation in the cases of Hong Kong and Singapore. In the case of Korea, the inclusion of the endogenous variable, *I*, actually decreases the good-of-fit and *I* is therefore omitted from the income

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[5] See M. Nerlove, *Distributed Lags and Demand Analysis*, Washington: Government Printer, 1958.

[6] This is identical in mathematical form with the Koyck distributed lag model, see L.M. Koyck, *Distributed Lags and Investment Analysis*, Amsterdam: North-Holland, 1954. But it should be noted that the underlying behavioural assumptions are quite different. While the Nerlove model assumes a process of partial adjustment over time, the Koyck model assumes that the weights of the successive lagged variables decline continuously following the pattern of geometric progression.

[7] One of the serious drawbacks of other lag models (including the Koyck model) is that the new error term is autocorrelated and that the lagged dependent variable is not independent of the new error term and in consequence OLS estimation is biased.

[8] See R. L. Basmann, "Letter to the Editor", *Econometrica*, October 1962.

### REGRESSION RESULTS OF A SIMULTANEOUS EQUATION MODEL OF EXPORT-LED GROWTH

*Hong Kong*

$$(1)\quad Y = 1022 + 0.5751 + 0.378X + 0.651Y_{-1}$$
$$(0.419)\quad (0.133)\quad (0.174)$$

S.E. = 264 D-W = 2.00

$$(2)\ M' = 169.4 - 0.0536Y + 0.160X + 0.698M'_{-1}$$
$$(0.0460)\quad (0.042)\quad (0.323)$$

S.E. = 87.4 D-W = 1.51

$$(3)\quad I = 254.5 + 0.444M' + 0{\cdot}692I_{-1}$$
$$(0.216)\quad (0.159)$$

S.E. = 288 D-W = 1.26

*Japan*

$$(1)\quad \mathrm{Y} = 236.8 + 0.5151 + 0.969\mathrm{X} + 0.845Y_{-1}$$
$$(0.530)\quad (1.220)\quad (0.231)$$

S.E. = 602 D-W = 2.30

$$(2)\ M' = 13.50 + 0.0517X + 0.589M'_{-1}$$
$$(0.022)\quad (0.232)$$

S.E. = 42 D-W = 1.57

$$(3)\quad I = 291.8 - 1.729M' + 1.159I_{-1}$$
$$(5.829)\quad (0.219)$$

S.E. = 576 D-W = 176

[9] J. Durbin, "Testing for Serial Correlation in Least-Squares Regression when some of the Regressors are Lagged Dependent Variables," *Econometrica*, May 1970.

*Singapore*

$$\text{(1)}\quad Y = 1097 + \underset{(0.768)}{1.4361} + \underset{(0.374)}{0.670X} + \underset{(0.152)}{0.294Y_{-1}}$$

S.E. = 66.3    D-W = 2.11

$$\text{(2')}\quad M' = 179.7 + \underset{(0.153)}{0.337X} + \underset{(0.441)}{0.689M'}$$

S.E. = 49.8    D-W = 1.27

$$\text{(3)}\quad I = 7.321 = \underset{(0.398)}{1.312M'} + \underset{(0.254)}{0.279I_{-1}}$$

S.E. = 45.4    D-W = 1.69

*Korea*

$$\text{(1')}\quad Y = 316.9 + \underset{(0.994)}{2.333X} + \underset{(0.195)}{0.719Y_{-1}}$$

S.E. = 39.8    D-W = 2.05

$$\text{(2')}\quad M' = 7.766 + \underset{(0.239)}{0.512X} + \underset{(0.308)}{0.502M'_{-1}}$$

S.E. = 26.6    D-W = 1.29

$$\text{(3)}\quad I = 38.43 + \underset{(0.330)}{1.761M'} + \underset{(0.154)}{0.375I_{-1}}$$

S.E. = 42.8    D-W = 2.29

*Taiwan*

$$\text{(1)}\quad Y = 22.49 - \underset{(0.951)}{1.9161} + \underset{(0.110)}{0.232X} + \underset{(0.354)}{0.728Y_{-1}}$$

S.E. = 2.19    D-W = 2.38

$$\text{(2)}\quad M' = 1.695 - \underset{(0.0240)}{0.0468Y} + \underset{(0.089)}{0.420X} + \underset{(0.199)}{0.450M'_{-1}}$$

S.E. = 0.79    D-W = 2.18

$$\text{(3)}\quad I = 0.997 + \underset{(0.121)}{0.132M'} + \underset{(0.177)}{0.735I_{-1}}$$

S.E. = 2.09    D-W = 2.18

equation. These three economies also indicate that the assumed exogenously determined $X$ bear a very strong positive relationship with the import of capital goods. Only in the case of Hong Kong did the inclusion of $Y$ in the capital goods imports equation improve the goodness-of-fit but in this case the regression coefficient bears a negative (though statistically insignificant) sign. The regression result of the investment function is of special interest to us as they should reflect whether domestic investment is constrained by the import of capital goods as hypothesized in the "two-gap" theory.[10] The results suggest that such a hypothesized relationship is definitely found in the cases of Korea and Singapore. It is less certain in the case of Hong Kong as the regression coefficient of $M'$ is only marginally statistically significant.

Japan and Taiwan in one way or another show variance to our model. In the case of Japan, it is perhaps expected that our export-led model which is basically designed for semi-industrialized countries cannot be entirely applicable. In fact we do not find any significant positive relationship between export and income for Japan. In the literature of Japanese economic growth there have been debates on whether economic growth is export-led or it is rapid economic growth that has led to fast expansion of exports. The general consensus tends to be that the pre-war (World War II) growth in Japan was definitely export-led while in the post-war period the phenomenon of growth-led exports was more likely to be true.[11] It seems it is most likely that export and growth are mutually interdependent in the post-war growth of Japan and only a simultaneous-equation system spelling out such an interdependence can deal with the relationship between export and income growth adequately. It is however not the intention of the present study to follow that up. Our results nonetheless further support the belief that the export-led mechanism may not be the sole or even an important factor in Japan's fast post-war growth. In addition, the "two-gap" hypothesis that the import of capital goods imposes a constraint on domestic investment can be entirely rejected. This is again not a surprise to us considering the capability of the Japanese economy in applying itself equipment and machinery tailored to its own needs. However, it is of interest to note that our results do suggest that the import of capital goods depends considerably on export perfomance. This could perhaps be explained by the fact that imports were indispensable to Japan's growth because of its lack of natural resources and hence rising imports in general and imports of capital goods in particular must be matched by equally rapid-rising exports. We should realize that Japan's borrowing, however large, could not have been sufficient to finance the increase in the import bill. This points to the interdependence between export expansion and economic growth and the conclusion that although export expansion might not have been a sufficient condition for Japan's rapid growth in the post-war period, it should have been a necessary one. Somewhat to our surprise, the post-war growth of Taiwan also does not conform so well to our export-led model as Hong Kong, Korea and Singapore. Nevertheless, we do find a marginally statistically significant positive relationship between income and export, and that imports of capital goods are significantly dependent on export expansion. What we have failed to find support for is the "two-gap" hypothesis that domestic investment depends on imports of capital goods. The clue to this can be found in the regression results of the income equation where it is shown that investment has no positive effects on income. The implication is that the effect of capital goods imports on income growth is not via investment but other determinants of growth such as technical progress and resources reallocation.[12]

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[10] In the literature the empirical investment demand function has been related to such factors as expected or actual output, profits, cost of capital goods, and liquidity. Our investment function relates investment demand to the import of capital goods. This function can be regarded as a new addition to the long list of investment functions. For a survey of empirical studies on investment functions, see D.W. Jorgenson, "Econometric Studies of Investment Behaviour: A Survey", *Journal of Economic Literature*, December 1971, and L.R. Klein, "Issues in Econometric Studies of Investment Behaviour", *Ibid.*, March 1974.

[11] See K. Ohkawa and Rosovsky (17), chapter seven.

In sum, with the exception of Japan, we have been able to find support of our simultaneous-equation export-led growth model in the economies under study for the period 1955–1970. The empirical support has been particularly strong in the cases of Korea and Singapore. For Hong Kong and especially Taiwan, some reservation should be given to the hypothesized "two-gap" proposition that imports of capital goods impose a significant constraint on domestic investment. Our results tend to suggest that we should be more sceptical in accepting the assumption of imported capital goods being a fixed proportion of investment in the "two-gap" analysis. It should however be pointed out that even if investment is not related to imported capital goods, it does not mean that the latter has lost its importance in the export-led mechanism. The importance of imported capital goods could be related to growth of income via other determinants of income growth.

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# INCOME INEQUALITY AND ECONOMIC DEVELOPMENT: WHAT DOES THE EMPIRICAL EVIDENCE SHOW

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This paper is concerned with the empirical underpinning of the well known Kuznets U curve hypothesis relating the size distribution of income to the level of economic development. The hypothesis asserts that inequalities widen with development but narrow again after a certain level of development is reached. Two comprehensive attempts have been made by Ahluwalia (1976) and Cromwell (1977) to test this hypothesis on the basis of cross sectional data over a wide range of countries. The conclusions of the two studies, however, differ to the extent of throwing doubt on the existence of the curve as conventionally understood. Moreover, even where the studies tend to agree there are reasons for questioning the validity of the results. The problem arises largely from the poor quality and non-uniformity of the primary data base. Given the current availability of survey data it appears doubtful whether the U curve hypothesis can be meaningfully tested on a cross section basis. Consequently, caution is warranted in treating this hypothesis as an established fact in development economics.

## I. Introduction

The Kuznets inverted U curve relating inequality in the size distribution of income to the level of economic development has attracted considerable attention in recent years.[1] The received wisdom appears to be that inequality increases as development proceeds but decreases subsequently. Since time series data with a sufficient number of observations are generally unavailable, at least for the developing countries, the trend has been towards international cross section comparisons. Two comprehensive studies in this area are Ahluwalia (1976) and Cromwell (1977). The problems with such comparisons are many. Lydall (1979) ably catalogs many of them, while the authors of the studies cited are themselves quite circumspect in their claims regarding what they have been able to show. However a careful examination of the quantitative evidence in the two studies together with research results from a number of studies on the size distribution of income (not necessarily in the context of developing countries) suggest that the "stylized facts" that these papers seek to establish may not be as firmly

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[1] The curve is an inverted U or U depending on the measure of inequality chosen. Some measures increase when inequality increases, others decline.

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grounded as we would wish to believe. Both conceptual as well as data related problems are involved.

Aside from a purely scientific interest, it is worthwhile to take a fresh look at the "U" curve hypothesis, since it can be evoked to rationalize a worsening of the size distribution of income in a developing economy. Such a worsening can be attributed to a phase of development through which every country must pass. Matters look different if there is always the promise of an improved distribution at the end of the journey.

In this paper some startlingly contrasting results in Ahluwalia (1976) and Cromwell (1977) are presented. An attempt is then made to see which, if any, of the results are robust enough to stand without any preconceptions, intellectually as well as ideologically.

## II. The "Facts"

Cromwell (1977) in Table 2 (p. 296, op. cit.) shows that when 62 non-socialist countries were ranked by their per capita incomes and then grouped by ascending per capita product class in 6 groups, the average income share going to the bottom twenty per cent of households declined from 9.1 per cent for the lowest group to 4.4 per cent for the highest.[2] Table 3 of the same paper finds a negative relationship between the income share of the bottom 20 per cent and per capita income, when a regression exercise was performed for a sample of 67 countries—the 62 considered above and 5 socialist countries. If the Gini ratio was taken as an indicator of inequality, a marginal relationship was found to exist between per capita income and inequality. To quote Cromwell "A country with a per capita income of $100 would require approximately 120 years to reduce its Gini ratio by 0.025 percentage points if the only change were a constant growth in YPC[3] of 2 per cent annually." While an explicit quadratic regression involving a squared per capita income term as well as per capita income itself as an independent variable is not presented by Cromwell, on p. 300, when he contrasts the relation between the share of labour force working for wages and salaries and inequality with that between per capita income and inequality, he states "Unlike YPC, SHAWE (Share of labour force working for wages and salaries), does exhibit a very pronounced non-linear relationship, with inequalities widening during the initial growth of the capitalist sector and narrowing again after the sector reaches a certain size." Since the adjusted $R^2$ is but only equal to 0.13 in the case where SHAWE is used as a variable, it is fair to conclude that a similarly estimated equation using per capita incomes would show no significant statistical relationship. This does not mean that Cromwell abandons the Kuznets hypothesis. Rather it is preserved with the share of labour force working for wages and salaries being taken as the index of development. The turning point of the inverted U curve in terms of the Gini ratio is where 40 per cent of the labour force is in the capitalist sector.

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[2] The share fell to 4.9 per cent for the third group, rose to 5.3 per cent for the fourth group, and then declined to 4.4 per cent for the sixth and final group, which consisted of developed countries.

[3] YPC=Per capita income.

Ahluwalia (1976) reaches quite different conclusions. For a sample of 60 countries, in his words (p. 309) "... there is clear evidence of a non-monotonic relationship between inequality and the level of development. The estimated equations test for a quadratic relationship with the logarithm of per capita GNP. We find that in all cases, both terms of the quadratic are significant and the coefficients have the appropriate opposite signs to generate the U-shaped pattern hypothesized by Kuznets." The adjusted $R^2$ for his 60 country sample when the income share of the lowest 20 per cent is the dependent variable is 0.54.

There can be several possible reasons for Cromwell not finding the Ahluwalia relation, even though he was essentially searching for it. The first is that his specification of the regression equation was in terms of per capita income rather than its logarithm. However this seems insufficient to account for the major difference in the two sets of results. The second is Cromwell's preference for the Gini ratio over quintile shares as the index of income inequality. However even when he uses the share of the bottom 20 per cent of households on occasion, his results are different. Cromwell also presents his Table 2 for grouped data, but grouping is to be commended in this context, since fine distinctions in income per capita are meaningless where the underlying income data are poor. Moreover the results are unlikely to be altered significantly by grouping. Finally the data base for the two studies was not identical. This last reason probably accounts for the major differences in the findings. The empirical evidence for the inverted Kuznets U curve is, in all likelihood, not as strong as one would like it to be.

Another variable besides per capita income on which both Cromwell and Ahluwalia have focussed in their search for explanations of inequality is education. Cromwell found (p. 303, op cit) that in a regression where the Gini ratio was the dependent variable and SHAWE and (SHAWE)2 were explanatory terms besides the level of schooling, the level of schooling was an insignificant variable. He established that schooling was significant only by relating schooling itself to SHAWE. On the other hand Ahluwalia finds (p. 323) that in an equation involving literacy rates and secondary schooling besides the quadratic in per capita GNP, the literacy rate variable has a positive impact on the income share of the three lowest income quantiles.

Where Cromwell and Ahluwalia are in agreement is regarding the socialist countries in their respective samples. Both find that a dummy variable for these countries is statistically significant when run against their indices of inequality, regardless of the inclusion of other explanatory variables. We shall come to this issue, which we dispute, later.[4]

## III. The Data

There are several dimensions along which data in the two studies could differ. Since the countries are ranked according to per capita income and since the statistics refer to different years in each country, per capita incomes have to be expressed in a set of constant prices. There is considerable scope here for variation, depending on the nominal income estimates selected as well as the price deflators and exchange rates. Unfortunately the data presented in the two papers do not enable a comparison to be made of this aspect. Second, since a number of alternative estimates exist for the size distribution of income for almost every country, if each author selects according to different criteria, a different primary data set might emerge, rendering all derived statistics noncomparable. This is, in part, what appears to have happened. For a sample of 20 countries in the two studies, where the data reported are not more than five years apart in any instance, Kendall's T for rank correlation for the share of the bottom 20 per cent was only 0.25. However what is extremely puzzling is that neither study imposed very stringent pre-requirements on the data to lead to such a wide divergence. If, then, the choice for primary distributions was largely a random selection process and a particular data set happened to generate the inverted U curve while another did not, the inference must be that the empirical underpinning of the result is rather weak.

Ahluwalia's study covered 54 non-socialist countries, while Cromwell was concerned with 62. However if an overlap of only those countries where the income share of the bottom quintile is known is taken, 38 common countries emerge. This is a sizeable reduction in number, but still a large enough sample to support a robust hypothesis. However, curiously, in only eight countries was the income share of the bottom quintile identical. In many cases the differences are striking. Working up from the bottom quintile, we find in Cromwell's exercise the share of the bottom quintile in Chad and Tanzania was 12 per cent and 9.6 per cent respectively. In Ahluwalia's the equivalent statistics for the same countries were 7.5 per cent and 5.0 per cent. Other striking differences are to be seen in Sri Lanka, Egypt, Kenya, Pakistan, Philippines, Colombia, Ecuador, Peru, Lebanon, Panama, Japan, Puerto Rico, Canada, Norway, U.K. and the U.S.A. The different estimates are listed in Table 1, with the observation years referred in parentheses.

There is no consistent bias in the two sets of estimates. Among the 18 cases where there were marked differences in the bottom quintile

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[4] The other hypotheses tested by Ahluwalia and by Cromwell are so different that the results are not comparable.

## TABLE 1

## ALTERNATIVE ESTIMATES OF THE INCOME SHARE OF THE BOTTOM QUINTILE FOR A SAMPLE OF COUNTRIES

| Country | Cromwell's Estimate | | Ahluwalia's Estimate | |
|---|---|---|---|---|
| Chad | 12.0 | (1958) | 7.5 | (1958) |
| Tanzania | 9.6 | (1964) | 5.0 | (1967) |
| Sri Lanka | 3.8 | (1963) | 6.0 | (1969–70) |
| Egypt | 5.6 | (1958) | 4.2 | (1964–65) |
| Kenya | 7.0 | (1961) | 3.8 | (1969) |
| Pakistan | 5.0 | (1964) | 6.5 | (1963–64) |
| Philippines | 7.0 | (1961) | 3.9 | (1965) |
| Colombia | 2.2 | (1964) | 3.5 | (1970) |
| Ecuador | 6.3 | (1968) | 2.5 | (1970) |
| Peru | 4.0 | (1963) | 1.5 | (1970) |
| Lebanon | 3.0 | (1960) | 5.0 | (1955–60) |
| Panama | 4.9 | (1969) | 2.9 | (1969) |
| Japan | 9.6 | (1962) | 4.6 | (1968) |
| Puerto Rico | 5.4 | (1963) | 4.5 | (1963) |
| Canada | 4.5 | (1965) | 6.4 | (1965) |
| Norway | 8.0 | (1963) | 4.5 | (1963) |
| U.K. | 4.7 | (1964) | 6.0 | (1968) |
| U.S.A. | 3.5 | (1965) | 6.7 | (1970) |

*Source*: 1. Cromwell (1977).
2. Ahluwalia (1976).

share, in 11 cases the Cromwell share was higher. In 7 cases, Ahluwalia has used a larger share. There is a slight tendency for the higher Ahluwalia shares to be concentrated in the upper part of the distribution of countries by income, which may have contributed to his obtaining the second branch of the U curve which Cromwell could not identify. The different sets of data cannot be explained by their coming from different years, since even data from the same year or years, very close to each other, are often very different.[5]

Could the differences arise from a different concept of income or recipient unit being used? Both these factors can be major elements influencing the size distribution of income. Cromwell mentions on p. 306, "This study has concentrated on the household as the basic recipient unit as it is more closely tied to welfare and the measurement of inequalities in standards of living." Ahluwalia, however, also stresses on p. 339 "wherever possible, household distributions have been used."[6] This suggests that the recipient unit in both studies was usually the same—whether this is the proper recipient unit to use, however, is something we shall consider later.

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[5] In principle, the overall shape of the inverted U curve should be unaffected by data coming from different years, since per capita incomes would also change. It is clear from looking at the data, however, that per capita income differences could not account for the large differences in income shares in the two data sets.

Cromwell considered eleven potential sources of artificial variation in the size distribution of income across countries. Of these individuals as recipients and the use of the Aitchison Brown technique to calculate the Gini coefficients were found significant when run with other statistically significant explanatory variables for the Gini ratio. Accordingly the Gini ratio used by him is an adjusted one. However his quintile shares appear to be unadjusted ones and potentially comparable to Ahluwalia's. Ahluwalia computed his quintile shares both by using a Lorenz curve fitted to the data as well as one which passed through the observed points. The results of his paper were not substantially affected by the choice. He does not appear to have corrected for the inclusion of distributions over single individuals, although, as mentioned, he has tried to confine himself to household distributions wherever possible.[7]

The justification of using data which may not ideally measure the variable we are concerned with in income distribution studies is succinctly summarized by Ahluwalia (pp. 342), "the presence of random error in the data serves only to hide cross country patterns rather than to generate spurious patterns. Such patterns as can be discussed despite these errors therefore deserve serious, if critical consideration." However further exploration of income measurement problems is required to see whether some of the biases are systematic or not. Also, even if there is no pattern in the errors, data sets which appear implausible or are known to suffer from major omissions should not be included in comparative studies.[8] As our examples in this paper illustrate, a particular overall pattern such as the U curve may not be replicable in such cases.

An example of the first type where both the studies seem to have missed

[6] However a reference to Jain (1975), which is the source of Ahluwalia's data, showed that in only 27 cases was the household distribution definitely used. In many cases the distributions are over the "population", an ill defined concept in many sources according to Jain. A similar check could not be performed for Cromwell as his data came from a multiplicity of sources.

[7] Jain (1975) distinguishes between six types of distributions. Of these, at least three involve distributions over individuals—these are distributions over the economically active population, income recipients and workers.

[8] Jain (1975) mentions on p. xii that distribution data based on "workers" or "population" are often ill defined and, at least for the former category, not representative of the population as a whole.

a systematic bias is in the case of the socialist countries. According to both Cromwell and Ahluwalia, the income distribution was much more egalitarian in these countries relative to western economies at their income level. However Lydall (1979) thinks this is spurious. First, the socialist country distributions are generally distributions of workers or worker households. Distributions among workers tend to be more equal than among households. Inclusion of only worker households also biases the results, since the poorest group in Socialist societies tend to be pensioners and collective farm workers.[9] Moreover, since direct taxes are unimportant in socialist countries, but progressive and significant in developed western societies the proper comparison should be between post tax distributions.[10] Lydall finds that after such adjustments are made, the income distribution in East European countries is no better than in the U.K.[11]

The case of the East European countries also serves to highlight the difficulty of comparing across economic systems. In kind transfers benefits are omitted in most definitions of income. These benefits are more important in the socialist countries then elsewhere. Moreover, while in the western countries they are concentrated at the lower end of the income scale (medicaid, food stamps, etc.), in the socialist countries they are likely to be concentrated in the upper deciles.[12] Thus the grounds for believing that the socialist countries have a superior income distribution are further eroded.

Another notable bias which has escaped or been glossed over by most empirical studies dealing with development and income distribution has been the treatment of recipient units.[13] There are two issues involved at least. Inequality measures are, in general, systematically influenced by whether the size distribution of income is measured over household income percentiles or over household per capita income percentiles. Also relevant is whether the per capita incomes are weighted with each individual getting an equal weight or each household getting the same weight. Moreover there seems to be no rationale for taking the distribution over household income since this clearly involves giving individuals different weights in the income distribution for no justifiable reason.

Secondly, different choices of income recipient units yield very different

[9] Usually state farm workers are included but collective farmers excluded from the definition of "worker."

[10] If such a distribution is unavailable, as is usually the case, it can be generated on the basis of some assumptions about the incidence of taxes.

[11] Cromwell (1977) discusses the issue of using data based on worker households, but still concludes that socialist countries are more egalitarian.

[12] Everyone consumes a certain range of basic state provided services, but the elite also get better housing, limousines, access to shops storing imported goods, etc.

[13] To be fair, Cromwell has adjusted his data for this bias but as our discussion will show the issuses involved may be too major to be dealt with satisfactorily in the way he has treated them.

kind of units in different percentiles. To give one example, in the U.S., the old are heavily concentrated in the lowest quintile of the income distribution when households are arrayed by income. However, quite the contrary is noticed if households are arrayed by their per capita incomes. This is because of the pre-dominance of single person households among the elderly. The phenomenon appears to have increased in importance in the last twenty years as greater affluence among the old has permitted them to retain independent households to a greater extent than before. On the other hand, black households in the U.S. are concentrated to a greater extent at the lower end of the income per capita distribution relative to the household income distribution, since household size is larger than the national average.

The lessons to be drawn from the detailed analysis of data possible for the U.S. indicate that a different choice of income recipient unit will possibly cause different explanatory variables to be relevant in explaining the share of the bottom quintile. It also focusses on the complexity of factors influencing income distribution. Clearly the age profile, the pattern of family formation of the population and the degree of racial homogeneity are important variables. While perfect data on these variables are not available, proxies can certainly be found for them. Yet neither of the cross section studies considered here have allowed for these factors. It has also been often remarked that the size of a country is related to income distribution, since regional inequalities tend to be important. Heuristic evidence supports such a proposition. The income distribution is more egalitarian in the Eastern European countries than in the Soviet Union and in individual W. European countries relative to the U.S. or Canada. In Cromwell (1977), Table 2 (pp. 296), the group I countries, which are on the average smaller than the countries in the other five groups have a much higher income share going to the bottom 20 per cent, However this factor again seems to have escaped analysis.

## IV. Data Collection Problems

So far we have been largely concerned with measurement problems which have arisen because of the way the primary data was collected, as well as the issue of which explanatory variables to choose in explaining the size distribution of income. There is the further question of measurement problems specific to the developing countries.

Even broad based surveys in these countries often omit those groups whose inclusion or omission may be crucial for the inequality measure. Korean sample survey statistics, for instance, omit rural non-farming households and residents of non-select cities from their coverage. Bhalla (1980) estimated that Korean Household Surveys left out between 20 and 30 per cent of the population, most of them very poor.[14] He reestimated the size

[14] "Yet Jain (1975) classifies the coverage for each of the five distributions for Korea presented in her compilation as "National" or comprehensive.

distribution of income in 1976, using plausible assumptions regarding the incomes of the excluded groups. His results show that contrary to the assertions of those who base their conclusions only on the incomes of the surveyed population, Korea's income distribution was not among the best in the developing world. Nor had the distribution improved during the high growth period of the late sixties and early seventies. Visaria (1980) surveyed a number of data sets and discovered striking omission in scope. Indonesia omits the very rich since their response is considered unreliable. In some countries landless households are left out of the rural sample. Since the omissions are generally concentrated at the two ends of the distribution they are likely to make relatively inegalitarian distributions appear equal. Furthermore, the omissions are by no means similar across the countries. It is probably the case that the richer a country is, the more accurate its income distribution data. There is some presumption for believing that the developed country data are less biased towards equality, but the exact magnitude of the bias is unknown.

Fluctuations in agricultural incomes are very large in developing countries. They are likely to be concentrated at the lower end of the income distribution since the poorest farmers work a larger proportion of unirrigated land holdings. In countries with a significant portion of income generated in the cash crop sector, however, fluctuations may be concentrated at the upper end of the distribution. In developed countries it has been found that the non poor who have suffered temporary income losses outweigh the poor who have gained transient income, consequently the proportion of permanent income accruing to the lower deciles is different from the proportion of actual income. In developing countries the extent of bias is unknown. However this does not mean it can be ignored, since in almost all cases we have only point estimates of the income distribution.

## V. Conclusion

Given the data and measurement difficulties involved in reaching any conclusion regarding the size distribution of income discussed above, the question naturally arises whether such studies ought to be pursued for the developing countries. The answer seems to be a qualified "yes". If much greater care is taken with individual country data, then some inferences can be drawn on a cross section basis. However many of the measurement difficulties are inherent in the structure and functioning of developing countries and cannot be overcome by greater research efforts or expenditure. Consequently less should be read into studies with as broad a scope as the ones discussed over here, and, moreover, studies where the primary data were collected without any thought that they would be analyzed on a comparable basis with data from other countries. It is difficult for any empirical researcher to be convinced by the existing cross country evidence that the Kuznets inverted 'U' curve is an established fact.

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# PLANNING AND PLAN IMPLEMENTATION IN THE DEVELOPING COUNTRIES*

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There are enormous differences among the countries of the "Third World" insofar as development possibilities, structural conditions and the development level of the institutions are concerned. Planning strategy and the planning system can only be correctly determined and evaluated in the light of the specific conditions of these countries. But it is also true that certain barriers to planning and the process of plan execution are repeated so frequently and under such a variety of circumstances that the community of certain problems becomes obvious.

In the late 1960's national economic plans were prepared in almost 100 countries of the world. About sixty of these "planning states" are developing countries. They include lands in which planning efforts and experiments have traditions running back two decades while in certain countries, e.g. in one or two countries of Latin America or in Turkey, the traditions are even older. However, the planning practice in the majority of the developing countries is hardly older than 10–15 years.

The advance of the ideology and practice of planning in the developing countries is not simply a technical or organizational matter but the result of struggles social in nature, taking place in the different countries and on international scale. It is a historical fact that from 1950's on, in other words, from the time that the problem of economic development appeared on the different international forums as a cardinal issue, the socialist countries have proposed the introduction of economic planning in order to supply an impetus to development while the industrially developed capitalist countries proposed that the developing countries use the "market model". The majority of their economists and political figures identified planning with "communism" and rejected it. For the sake of completeness it should be pointed out that even in the socialist countries there were economists who for years viewed planning as exclusively a characteristic, a "monopoly" of the socialist economy, practically speaking they considered the sole possible form of planning to be the

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socialist planned economy while they identified the whole of capitalism with the concept of economic liberalism.

Even in the developing countries themselves in the beginning the plan was the motto of the progressive national forces only, who saw it as the means for concentrating limited resources, capital and qualified manpower in the interests of accelerating economic growth, and for breaking through the centuries old rigidity of society and the economy. In this sense planned economic development was a revolutionary tool and a radical break with the past. The achievements of the socialist states, and foremostly of the Soviet Union, were the principal propagators of planning in the sphere of the progressive national forces, equally on the ideological and practical planes. The majority of the bourgeois ideologists and practical experts on planning proved to be surprisingly forgetful with regard to the origins of national economic planning. The American professor Bertram Gross, one of the well known Western experts on planning endeavours to derive plan preparation in the developing countries as stemming from the general "planning" nature of man.[1] He forgets that individual activity and activity on society level are not identical. Certain changes had to take place in order that planning be able to occur on society-wide level.

At the same time in dealing with the planning of the developing countries some bourgeois economists recognize the pioneering role of the socialist countries and the enormous importance of their experience. For instance Gunnar Myrdal of Sweden, in his famous work *Asian Drama*, although he does not deal at any length with socialist experience, when it comes to the chapter on "Spread and Impact of the Ideology of Planning" he draws the following conclusions: "That the ideological influences from the Communist world have been strong is quite apparent. Very generally, but particularly in India, Burma, and Indonesia the intellectual and political leaders had received strong impulses from the Russian revolution . . . The five-year plans of the Soviet Union were recognized as the pioneering attempt of an underdeveloped country to engender economic development by state planning, and have been a decisive influence, which has not spent its force. This influence is being reinforced by communist planning elsewhere."[2]

Part of the Western bourgeois economists have also recognized the broader interrelations of the attractive force of socialist planning. It was partly as a result of this that the ideal of "democratic" planning as an alternative to so-called "communist" planning has appeared in Western economic literature in the past decade, a fact to which Myrdal also refers. For instance the document presented to the U.N. by the Government of

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[1] The Administration of Economic Development Planning, New York, 1966, U.N., 1 p.

[2] Gunnar Myrdal, Asian Drama, Vol. II, New York, 1968, 726–727 p.

Columbia makes the following comments: "Planning in democratic countries differs substantially from planning in totalitarian regimes, because it gives due weight to the dynamic and basic role of private enterprise, in addition to government action, and to the restraints which, in a democracy, fortunately limit the control of the State over the economy. This form of planning does not automatically imply more extensive direct state intervention . . . It is not designed to restrict private enterprise, but rather to improve the conditions in which it operates."[3] Certain bourgeois planning experts have exhibited this so-called "democratic planning" as the competitor to "Communist planning" in the Third World.[4] But in this way they have narrowed down the complex social interrelations of economic growth to a false alternative.

Planning as a social technique has in fact become not only an important tool in the socialist and developing countries but a part of the economic policy of many developed capitalist countries as well, and in any case this reflects that the classic mechanisms of capitalism are incapable of overcoming the enormous problems towering over the developing and the industrially developed capitalist countries. However, with regard to its content and objectives it depends on the nature of the society, on the power relations of the different classes and of the different strata within the classes, as well as on the power structure, for these determine its conditions, nature, specifics, and the means it can apply.

Planning in the developing countries or in the industrially developed capitalist countries is, of course, not identical with the socialist planned economy. The socialist planned economy includes the central management of the whole national economy and this includes influencing relationships between the enterprises and the individuals. The socio-political prerequisite to the socialist planned economy is the existence of the socialist state and social ownership of the major means of production. The ownership function of society is practiced by the socialist state in the name of society.

The social and economic prerequisites for state planning in the non-socialist countries are more limited and, correspondingly, their basis is more limited.

In reality of course, the capitalist and the socialist systems are very broad categories and even amidst the framework given by the nature of the system there are significant deviations in the form and content of planning. In addition, the so-called "Third World" is highly different from the socialist and the industrially developed capitalist countries in many respects. There are also significant social and economic differences among the developing countries themselves. There can be no doubt that these differences all influence the specific of planning. The Columbian opinion

[3] Planning for Economic Development, Vol. II, New York, 1965, U.N. 20 p.
[4] Myrdal, op. cit., 227 p.

on the relationship between the state sector and private undertakings quoted above is not a general one, even in those developing countries where the weight of the private sector is significant.

Therefore the contrast and competition of "democratic" and communist" planning is not only misleading but it does not correspond to true present conditions either.

Of course there were many identical features in the plan administration systems of the different countries in a certain stage in the development of the socialist countries, and in the eyes of many the system of plan indices compulsory in force, and broken down to the most minute detail were the socialist form of planning. Even in the socialist countries there were economists and political figures who considered this method to be the only possible form of socialist planning, or in fact planning in general and this is what was believed by the opponents of socialism as well. But in the past two decades the situation has changed fundamentally.

However, not even in the administrative plan system did the planning experience of the socialist countries limit themselves to administrative methods alone and the existence of the plan administrative system was justified by certain circumstances and certain tasks facing solution which in many respects were similar to the problems the developing countries are now facing. In examining the planning of the developing countries it is both worthwhile and necessary to throw light on the concrete experience in the decades old planning practice of the socialist countries which can be used by the developing countries, taking of course, the differences into consideration as well.

## 1. Planning in the socialist countries and the developing countries

In the final analysis the methods of planning and plan execution in the socialist countries were determined by ruling social and political conditions. Despite this, even in the past the effects of socialist planning on countries operating under different social and political systems were significant. This appeared on the social and political level in the form of the increasing popularity of socialism. There is hardly a developing country which would dare to openly declare itself as capitalist, or which would dare to mark the creation of a capitalist system as its economic policy objective. Often even big capitalist and feudalist circles use "socialist" phraseology, without of course, making the slightest effort towards a more even distribution, of incomes or alleviation of the merciless forms of exploitation.

The effects of socialism also appear in the developing countries insofar as the general recognition of the advantages of planned development are concerned.

It is also a fact that following certain modifications many countries have introduced methods developed in the socialist countries, and foremostly in the Soviet Union. Here it should be sufficient to mention selection of the five year plan period, the use of material balances and other methods, the internal organization of the planning bodies, planning offices and planning ministries, the various lawmaking and executive bodies, and to a certain extent the fact that summarized prescriptions and their reality were formulated through regular consultations among the economic bodies on various levels.

In general bourgeois economists dealing with planning have emphsized that the conditions under which the socialist countries developed their planning system are significantly different from those presently characteristic of the majority of the developing countries. This is of course true in many respects. But it is also true that the conditions of the different developing countries are not identical either and the conditions of the socialist countries also differ from one another. The most essential differences between the socialist and the developing countries are in their economic and social relations, and this plays a decisive role in planning and plan execution. But in addition to the differences there are many similarities in fields which play highly important roles in planning and development policy. Economic backwardness must be eliminated and in a comparatively short period of time. In order that this be done the developing countries must execute enormous structural changes too. Not only must they break the resistance of forces opposing this, but they must also make large masses interested in executing the changes. At the same time the appearance of a large number of new demands and increasing pressure must also be taken into account (e.g. in the fields of accumulation and consumption). It must be ensured that the accumulation realized in non-convertible currency or in agricultural products is "transformed" into modern machinery and installations, etc. etc. Analysis of the planning experience of the developing countries proves that had they known the experience of the socialist countries and used it satisfactorily, they would have been able to see many problems more clearly, and would have been able to avoid many pitfalls. But in general this was not the case. It is also true that the socialist countries themselves did not make sufficient effort to analyze their own planning system and experience in a critical manner which could have been put to use by the developing countries.

In the framework of this study we cannot undertake a systematized summary of the experience gained by the socialist countries in the development of their own planning. It is obvious that from the point of view of the developing countries the examination of the beginning of socialist planning, the first steps, the achievements and failures is what is interesting and important. This was the period in which the strongly centralized planning system, based on central directives, was formed in close relationship to the magnitude of the objectives and the efforts required to attain them. The social ownership of the means of production provided a good opportunity for the operation of the centralized plan administrative system.

Even in the beginning stages commitment to building communist society, as a final objective, influenced the priority of planning. In this respect the position of the socialist countries was really significantly different from that of the developing countries. The effect of these factors on plan execution was also highly significant. They made it possible for the socialist countries to build up the complex hierarchic system of planning, from the planning office through the economic ministries on down to the individual enterprises. Prescriptions in the central plan were passed on to the lower organs in the form of compulsory instructions, following a gradual breakdown of the plan. These instructions strove to keep in hand the entire system of economic activity on the part of the economic units and to directly regulate the relations among them as well. The establishment of this system made it possible for management to include all executive bodies in the elaboration of state plans. (Of course a certain amount of participation on the part of the producers is also possible in other socio-economic systems as well.)

As already mentioned the objective of forming socialist and communist economic and social conditions left its mark on planning too. Since economic planning is viewed as the tool for economic and social transformation political objectives have a significant effect on the realization of the plans. The effects of the political concept on planning in the socialist countries differed in the different periods. However, at all times the general objectives played a decisive role in reinforcing the social ownership of the means of production and gradually increasing the weight of social consumption within total consumption (in other words, consumption provided to the consumers free of charge, irrespective of differences in incomes).

On the basis of planning experience in the different socialist countries today it is clear that the methods of plan execution applied by the Soviet Union in earlier phases are not to be considered the sole possible way of managing and planning the socialist economy. It is also a fact that if we examine the issue in satisfactory historical perspective then we will hardly be able to find adaptable alternatives in the building of the first planning system in the given historical situation.

Part of the lessons in the storehouse of planning experience of the socialist countries is organizational and technical in nature. However, despite the social differences, economic policy lessons are also highly essential. In itself the fact that organizational and technical conditions must be treated in harmony with economic policy decisions is an important lesson. The process of economic management contains numerous related and interdependent stages: prognosis, preparation, planning, plan execution, control of the results of management and correction of the undesirable effects by management on the objectives.

Specific tasks must be solved in each stage and an organization must be formed to correspond with it. The different stages must be in harmony with one another.

In the socialist countries, in general, the contents of plans developed in interrelation with the possibilities for execution and the methods applied.

Significant achievements, and, from time to time, failures mark out the road in the development of planning. The failure did not lead to less confidence in the plan or to a decline in its weight or importance. The socialist countries developed the most circumspect and most detailed development plans. The technique of planning underwent enormous development. From the late 1920's on, the Soviet Union for instance, formed its comprehensive national economic plans simply by summarizing and combining the plans of the branches. At the end of the 1960's integrated multivariable plans based on simulation were elaborated. Endeavours were made to form optimum plan variations as a function of the given tasks.

In the socialist countries endeavours were made to avoid a separation of planning and plan execution policy characteristic in many developing countries where often objectives are formulated without weighing their reality and these objectives are not supported by further decision on executing the plans.

Another lesson to be learned from socialist planning: an active development policy should not wait until sufficient information, data, knowledge is available to complete comprehensive, fully elaborated plans.

The lack or quality of data has never been used as an excuse in the socialist countries for rejecting efforts in planning. In the beginning stages of development government actions in the Soviet Union were concentrated on strategic tasks which had significant indirect effect on the whole economy. The lack of statistical data and qualified manpower, shortcomings in organization and the general condition of the economy made it impossible to prepare a comprehensive plan, executible in all details, at this stage. The operative programmes of economic policy were intended to solve specific problems. These programmes were often more closely related to current measures of necessity than to perspective development objectives. However, later operative programmes were concentrated on those central tasks which were considered essential on the long term also, from the point of view of the growth of the economy. Efforts to realize limited objectives were considered more important than the elaboration of a comprehensive plan which lacked the means for realization.

The technical prerequisites for complex planning were formed through the practice of planning and plan execution and were also perfected in this way. In this field the development of the plan and statistics is noteworthy.

The view that broad-scale state intervention in control of economic processes is essential in order to attain the desired social objectives through economic management influenced the development of the socialist countries in all phases. From different levels and from time to time there were changes in the views of the executive bodies with regard to the breadth of the plans, the number of plan prescriptions, the extent of the breakdown and its nature as a guideline, an index of orientation and as a compulsory prescription and directive. However, in all cases, even then compulsory prescriptions were limited to specific sectors or branches; selection depended to a great extent on the effects on the whole economy and not on the profitability of the individual undertakings.

For instance, the first long term plan, elaborated by the Soviet Union in 1920, and running for a 15 year period, was limited to developing electric current. However, this plan was never treated in isolation from the general problems of economic growth. From its very beginnings it was a focal point around which other prescriptions were also formed. (The first such prescriptions referred to the means of production needed for the energy network, and later an integrated plan was formed, covering the whole economy.)

The first comprehensive medium term plan was elaborated in 1928 only. In a similar manner to the first Soviet plan the first reconstruction plans of the socialist countries following World War II were by no means as comprehensive as were the Soviet five year plans or their own later plans for that matter. Later on the plans in these countries contained a large number of prescriptions, which in addition to the state owned sector, covered the cooperative and the private sector, which were particularly significant in agriculture in the beginning stages of planning. It happened in the era of constant and detailed planning too, that execution of the medium term plans was stopped prior to their expiration, for unforeseen circumstances occurred or it was recognized that the plans had been incorrect at the outset, and that this had become apparent during the course of execution. It happened that these cancelled plans were not immediately substituted with new medium term plans. This, however, did not mean a weakness in active development policy which, in the given periods, was managed through transitional plans.

For the first time in history the socialist countries, within the framework of a complex, comprehensive system of the planned economy, made significant efforts towards creating the personal conditions for economic and social development through an enormous expansion in the educational network, and a cultural revolution in the strict sense of the term, which made it possible to raise the cultural standards of the broadest strata of the people and, thereby, achieved a significant rise in production potential. Simultaneously and in parallel with production priorities they determined the major fields for the structural transformation of the educational system. It was only in the late 1950's and the early 1960's that the developed capitalist countries recognized the great importance in developing personal conditions. The socialist countries had modernized their educational systems in an early stage of their development, and had connected all of its links to measures directed towards solving the tasks of economic development. The changes were expressed in a noteworthy rise in the number of teachers, in an increase in the ratio of training engineers and technicians, in the large scale development of the network of various specialized industrial and agricultural schools, etc. These changes made it possible to achieve a significant reduction in the shortage of specialists hindering economic development and to create the cadre conditions for further development.

The socialist countries, in theory always viewed the elaboration of comprehensive plans extending to all areas, and independent of the possibilities and willingness to execute them as irrational and misleading practice. However, it is also clear that the lack of means directly available to execute comprehensive plans has never led to accepting a plan narrower in basis than the previous one. Quite the contrary, significant efforts have been made in order to improve the necessary conditions for execution, in all sectors of the economy.

This practice has not changed since the introduction of the reform in economic control and management. The reforms did not eliminate the system of central planning, and in fact they reinforced and improved the scientific foundations of the central plan. An entire series of new methods was introduced to central planning. However, the autonomy of the state owned enterprises was greatly increased and the numbers of compulsory plan indices were reduced. In certain countries, these reforms, in essence put an end to planning based on administrative prescriptions and used material incentive to a broad scale, while the market also received a greater role. From the point of view of plan execution these changes put the state owned enterprises into a somewhat similar position to the ones in the developing countries insofar as their activities are concerned. Since in the socialist countries the formulation of the plans are closely related to the possibilities for realization and execution of their prescriptions, the new methods of execution have a strong effect on the contents of the plans, the number and nature of prescriptions and the degree of their breakdown.

This means that increasing the role of the market mechanism does not reduce the role of central planning and state intervention in economic processes, and does not become more important than these. It does however, mean a significant difference in methods. The objective of these changes is to reduce the intervention of the government in the day by day activities of the enterprises and production organizations. Instead the government provides increasing incentives to the enterprises to act within the framework of the general economic policy objectives. Budgetary policy, credit policy, and price policy means together with other factors are used for these incentives.

The new system of economic control and management has raised many issues of economic development which have won new dimensions as the result of economic reforms. The most important of these issues,. which are also highly interesting to the developing countries are as follows:

—Should the national plan contain prescriptions which cannot be executed without state orders or budgetary financing?

—What should be the extent of direct state intervention?

—Should government intervention be limited to global economic policy means, or should it use a selective policy to influence the economy in a manner having different effects on the different areas?

In connection with these changes it should be pointed out that not even in the most centralized system was it possible to reduce enterprise activities wholly to instructions. Despite the fact that almost all forms of enterprise activity were reduced to and based on directives, endeavours were made to achieve execution of the compulsory plan indices through awards, or withdrawal of awards.

Organization of the execution process for the plans, and control of execution can also provide interesting lessons to the developing countries. The method of society-wide cost benefit analysis, mentioned in the bourgeois economic literature of recent years as a new discovery, the method which goes beyond evaluation of the direct profitability of the individual new establishments in analyzing the effects of input and also examines society-wide profit, is also rooted in the practice of the socialist countries. In evaluating the planning experience of the socialist countries, it is of course impossible to overlook certain problems which the socialist pioneers of the planned economy were unable to completely avoid, due to objective or subjective reasons. One of the most significant problems was the power of the planning bodies over the economy due to a simplified interpretation of economic processes, and its voluntarism derived from exaggerating its possibilities. Voluntarism in elaborating the plans appeared in overestimations of the output capabilities of the economy and the plan directives were thus formed with irresponsible optimism. As a result, certain plan prescriptions were not fulfilled, and the result was serious disproportion.

The source of voluntarism cannot simply be sought in the characteristics of certain individuals. This is a possibility inherent in the essence of the planning process. The planners work with quantities, and form interactions, and interrelations non-existent in reality. If during the course of planning, the forces of control in the socialist economy and society, such as the scientists, the broad scale inclusion of committees of experts, the mechanisms relaying the opinions of the organizations and masses participating in execution of the plans, are not used, and no regular dialogue with them takes place, then continuously existing possibility of voluntarism cannot be sufficiently negated.

The danger of bureaucracy must be taken into account among the negative experiences gained during the course of planning. Unquestionably possibilities for this are greatest in the administrative plan directive system, but they are not limited to this system alone. The mechanisms of this type of planning lead to a conflict of interest among the economic management bodies. This conflict appears, among other manners by keeping reserves in secret, and by bargaining during the course of plan talks. They have an unfavourable effect on the relations of the related economic bodies, and affect the level of planning and plan execution. Waste, neglectful economy, the high costs of economic development—these are the major consequences of preponderance of bureaucracy in planning.

The supreme opposing force to bureaucracy is the democracy of the planning and plan executive process, the inclusion of the broadest possible strata in planning and in all phases of plan execution and control. In this field the socialist countries have done far more than any other "planning" state. This has appeared, among other ways, in describing objectives understandable to the masses and supported by them, and in mobilizing broad masses in the interests of the plans. The Swedish economist G. Myrdal, in the work already mentioned, complains that in many Asian countries economic planning is the cause of a narrow elite, and is swallowed up by the general passiveness and disinterest on the part of the masses. The experience of the socialist countries proves that correctly marked objectives, good plans which, if executed, have a favourable effect on the economic positions of the broad masses and the life of the given country, are capable of breaking through the passiveness of masses, and of including them in the creative process of great economic and social transformation.

## 2. The Conditions of Planning in the Developing Countries

There is hardly any literature in existence containing critical analysis of planning practice to date in the developing countries. Thousands of studies have appeared on the subject of planning in general, and on the various aspects of planning. But this literature limits itself principally to stipulating general principles.[5]

It is unavoidable to also discuss the relationship between the plan and economic policy for the objectives and the tools are formed and developed in interaction with one another, and certain overlapping is therefore unavoidable.

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[5] So far the greatest efforts to complete comparative evaluations of the planning experiences of the developing countries have been made by the UNO Commission on Development Planning and the UNO Economic Development, Planning and Forecasting Centre. So far the UNO Commission on Development Planning has evaluated the experience of planning and plan execution in Latin America, Africa and in South East Asia. The author of this study has participated in the examination of the first two fields, and has in part made use of the studies prepared in these fields for the present work.

Its dependence on economic policy stems from the essence of the planning process.

Economic policy and the plan must develop in close intereffect in a well operating planning system.

Logical considerations and concrete analysis also prove that the conditions for planning are sharply different in the different developing countries.

First of all, economic conditions are different.

The weight of economy in natural units and market sector, as well as the development of commodity and monetary relations differ. Even in the so-called market sector there are differences in the significance of small scale industry, handicraft industry and large scale industry. In the modern private sector of industry, there are different ratios of national capital and foreign capital. There are strong differences in the relationship between the state owned sector and the privately owned sector. These structural differences in ownership relations and within this, e.g. in land ownership play a significant role in the nature and content, as well as the form of planning. For instance, a heavy weight of private ownership and economy in natural units sharply reduces the appliable forms of planning and limits its tools. In many developing countries it has been recognized that the forms of planning applied cannot be passive consequences of the structure of ownership relations, and in practice they are not. One of the consequences of ownership relations and an institutional system corresponding to them is economic stagnation. The introduction of planning to economic life, however, assumes incentive to economic development, and aid to dynamic economic growth. This process has an active counter-effect on ownership relations too.

The developing countries also differ from one another with respect to their levels of political and economic development. This means that not only are there differences in their economic policy objectives but that there are also significant differences in the means needed to attain these objectives. There are strong differences in both means and in objectives, e.g. depending on the progress which the given country has made in the field of the social and economic structural transformation related to industrialization, or whether it is only on the threshold of this transformation.

Determination of the means and the objectives is not only and in fact is not principally an economic problem in the developing countries. It is significantly influenced by the nature of political power which view the problems mentioned in different manners. As a result there will also be differences in priorities, and differences in the approach, to the direct and perspective objectives in raising living standards, and in many so-called non-economic aspects of way of life. The role of sphere of political power in planning, however, is not limited to forming the objectives. Its great importance requires that we make a separate examination of its role in planning.

## A. *The role of the sphere of political power and planning in the developing countries*

In all planning systems determination of general objectives only has economic sense if the potential means and methods needed to attain them have been recognized. If the bodies in power mark out the objectives without first having recognized the possibilities and limitations of the available means, this builds serious disturbances and serious problems into the work of the planning bodies and the plans. Phenomena like this are quite frequent in the developing countries. In addition of a lack of knowledge, subjectivism, and prestige reasons a role in this is played by the fact that the political groups in power often use the plan for political propaganda against the opposition, and the objectives are unrealistic simply for the purpose of outbidding. Often these objectives are dictated by impatience and the intention of more rapid progress. Brazil's three year plan for 1963–1965 would have concentrated the slow-down of inflation, the acceleration of economic growth, the rapid development of public education, health, and scientific research, the reduction in the differences in development in the various areas of the country, the land reform, etc. all to within one brief plan period. Simultaneous solution of tasks of this nature is, of course, impossible, and it is particularly so under this short period of time.

Interrelated to the ways and the means, as well as the objectives, we find the appearance of certain essential political problems such as from where to obtain the necessary material resources: should heavier taxes be placed on the rich or on the poor, what are the foreign sources on which they can rely, what conditions should they accept, etc.

Despite the fact that for all practical purposes there is planning of some kind going on in all developing countries, *political resistance to the plan* is by no means insignificant today either. It is not only the most reactionary forces in the societies of the given countries which oppose planning (principally fearing the necessary reforms), but also certain local capitalist groups which feel that certain prescriptions in the plan impinge on their interests. Hidden, and in some cases open resistance to planning appears on the part of foreign capital operating in the extraction branches of more than one developing country, etc. This is one of the reasons why it is fundamentally important, in analyzing the planning systems of the developing countries, to know the political and power relations and centers, e.g. what is the level, composition and political affiliation of the bodies, and what is the nature of the decisions they can make on problems regarding the form and content of the plan.[6]

One of the most important technical decisions connected to the plan, the length of the plan period is in part a political issue, for its relationship with the cycle of political life (e.g. the elections) is not a matter of indifference. A highly important political issue involves the weight and role of the planning bodies and their relationship to the various institutions. The centres of planning are the planning committees, and the planning offices, whose spheres of authority differ depending on their level of location within the state organizational hierarchy. The activities of the central planning body are more effective if the body was created as the result of a strong administrative reform and it also receives great political emphasis if it is directly under the jurisdiction of the president of the republic, the head of state, or the collective body of state leadership.

One of the most important organizational conflicts in the state apparatus, in connection with planning, if the introduction of planning does not take place simultaneously with a significant administrative reform, develops between the central planning body and the Ministry of Finance, which is the traditional establishment for the economic tasks of the state apparatus. The practice of the developing countries differs strongly with regard to forming the political and administrative conditions for planning.

It may occur that the central planning body operates in direct subordination to the office of president of the council of ministers, as an autonomous unit, as e.g. Cordiplan in Venezuela. Sometimes it is simply one of the various ministries and there is no subordinate or superior relationship between the planning body and the rest of the ministries, as e.g. in Syria. This solution, in itself, is the source of quite strong conflict for often the rest of the ministries do not recognize the special role of the planning ministry. This situation is alleviated somewhat by inter-portfolio committees formed mainly of representatives of economic portfolios, which play the role of a "collective decision making body" on the question of planning (e.g. Pakistan).

The planning office is often an autonomous unit which is only technically responsible for elaborating the plans, and plays no other role (e.g. Mexico). This means that the central planning body is far from central power where the essential decisions are made. Experience has shown that planning is far more effective if the central planning body is not simply a technical but is also an important political body.

A close relationship between the various ministries, national authorities and other bodies, and the planning center ensure greater flexibility. They make better coordination possible in all phases of planning. In many developing countries, it is, however, also an essential question to planning that the leader of the central planning body have a suitable status in the government. If he is only a "technical manager" then he will be in an unfavourable position compared to the ministers and this will also affect the weight of the body he leads.

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[6] For more details see: Proceedings of the Conference on the Implementation Problems of Economic Development. Plans and Government Decisions in the Countries of Black Africa, Vol. 1, Budapest, 1971. Centre for Afro-Asian Research, 13–32 p.

In many developing countries significant administrative reforms were executed simultaneously with the introduction of planning, and they ensured their planning committees, or planning offices with a central role. On some occasions special groups, departments were also established in the various ministries as organs with local self-government and they are held responsible for planning activities. These are often directly related to the planning offices. But this system does not eliminate conflicts of authority or on other matters from the state apparatus of the developing countries either.

A frequent problem is the spread of bureaucracy and the exaggeratedly detailed, operative intervention of the central bodies in economic life. India's example in this connection is not an isolated one.

It was principally on proposal of the deceased Prime Minister Nehru that the Indian government gave broad-scale authority to the Planning Commission (the supreme body of planning in India) and in 1950 the tasks of the Planning Commision were determined to be the following:

1. The evaluation of the material, capital and human resources of the country, including technical experts; examination of the possibility for increasing resources in cases when they appeared insufficient to comply with the requirements of the country.
2. The elaboration of a plan which would ensure the most efficient and most balanced use of the country's resources.
3. Determination of priorities, determination of the stages in which the plan was to be executed, proposal for the distribution of resources in such a way that satisfactory execution of the various stages may be ensured.
4. Determination of the mechanism which was needed in all phases of successful execution of the plan.
5. Regular evaluation of the development attained in the plan, proposals for necessary modifications, and establishment of the necessary means.
6. On the basis of the authority given them, the elaboration of proposals and evaluations on the current economic situation, economic policy, its regulators, for the central government and the state governments.

In the 1950's the Indian planning commission was an important body with great prestige. In the 1960's the situation changed. In the latter half of the 1960's the center planning body was held principally responsible for the failures of the plans and for damaging the reputation of planning, for it had become a bureaucratic planning apparatus. Due to the failure of the third five year plan and the serious disturbances in the fourth plan the planning commission was reorganized for it was believed to be incapable of meeting with its tasks. In the beginning Nehru himself was a member of the planning commission, in order to underline the importance of the body. Following his death the level of the planning commission deteriorated step by step. Many of the members (particularly the ministers) complied only formally with their responsibility. In 10 years the apparatus of the planning commission had increased fivefold and this growth was almost exclusively in administrative and therefore not in expert staff. The apparatus, instead of dealing with the long term problems of the economy and the structural issues, involved itself in the operative questions of detail. These factors served as food for attack from right wing opponents to planning.[7] Indira Gandhi's administration endeavoured to reestablish the prestige of the planning commission and planning in India with the reorganization and "rejuvenation" of the planning commission.

A highly important question in planning under the conditions of the developing countries is the continuity of political power. The frequent coup d'etats of the 1960's in certain African and Latin American countries made a farce out of the planning systems as well.

In certain cases the rapidly changing political sphere led to the formation of a special conflict among technical experts and political figures.

The experts demanded greater autonomy in planning. They emphasized that through their professional knowledge they were better prepared to manage the economy and to determine plan objectives than the political leaders. (It is unquestionable that the planners and plan economists play an important role in elaborating the plan and in the process of giving it its final influence. However, as e.g. the case of more than one Latin American country has proved, the planners are rarely victorious in conflicts between the political sphere and the planning experts.) The specific consequence of the frequent political changes and the conflict between experts and political figures has been the formation of an opinion in many countries that since the political sphere is subject to change the economic sphere should be left in the hands of experts and "kept separate" from politics. This process has also resulted in a view among the experts that the plan must be extremely modest, and under no circumstances should it be allowed to disturb the existing political order. It should be capable of satisfying the demands of more than one regime. (This was e.g. the position of planners in Brazil and Venezuela in the 1960's.) It is of course impossible to prepare plans like this. Planning on state level cannot be politically neutral in any country of the world, just as there is no politically neutral state power either.

In certain countries of the developing world, e.g. in Latin America, it of course also frequently occurs that *the planning experts are more radical politically*, and represent a different socio-political force than the government, and that they fight actively for socio-political reforms with the aid of the plan. This conflict also plays a role in the fact that certain conservative political figures, principally in Latin America but in other developing countries too, turn against planning, or would reduce the plans to meaningless documents, to papers with no power whatsoever.

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[7] Economic and Political Weekly, Bombay, February 25, 1967.

Political conflicts of another nature also are concentrated around the plan. Despite the fact that e.g. the governments often approve of planning as a related, comprehensive development policy means, in many cases there is no effective unity within the power sphere regarding the approved objectives of planning. Certain forces within the government view the plan as simply a means to mobilize external financial resources which are needed in order to win external aid. As a result those issues which are directly related to external support receive special emphasis within the plan. Other groups in the government or the leading party would use the plan as the revolutionary means for social action from the theoretical and practical point of view, as an aid in execution of wise and essential social changes within the given country. (The domestic policy battles which took place in Egypt and Pakistan on the question of planning in the late 1950's and the early 1960's are a very good illustration of these conflicts.)

The role of the political sphere does not, of course, come to an end with the elaboration of the plans. Planning also needs strong political support in the phase of execution. In essence the intentions regarding execution of a given plan are decisions of a political nature. Political support means mobilization not only of the supreme state bodies but also of the people, in the interests of the planning objectives. This makes it necessary that the objectives outlined in the plan be able to become popular, and mottos for mobilization, which the people can accept as their own.

This is also necessary for in the developing countries the plans often meet resistance from sectors which feel themselves threatened by the measures prescribed. Often there is also resistance on the part of "traditional" state administration which stalls enormously in executing the changes in the institutions. It jealously guards its positions in face of all regrouping of power which might lead to the reorganization of the administrative structure.

The problem of political support is even more important in those countries where the privately owned sector is significant. The resistance of the private sector is unavoidable in cases when it is a question of planning decisions effecting or opposing their interests. Of course, certain spheres of the private sector can support the plan in cases when it favours them, when it e.g. regroups investment resources, or the national income to correspond to their interests. Despite the fact that, for example, the objectives of the first five year plan in Pakistan were well within the economic and financial possibilities of the country, the objectives were far from attained for the government bodies did not support execution of the plan. At the same time the objectives of the second five year plan, which received full political support, were overfulfilled. (This second plan made less endeavour for social or economic reform, and rather endeavoured to stabilize the existing system of income distribution and to support big capital and the landowners.)

The planning bodies are often isolated from the centers of political decision. Often the planning offices are given the job of elaborating the plans with little or no guidelines given by the political organs. (This is the situation in e.g. many African countries.)

No small problem is caused by the fact that those working in the political sphere, who have highly significant voices from the point of view of decision, often do not understand the contents of the plan. Economic planning with linear programming, input-output matrices, operations research and production functions has become a highly complicated task, requiring highly specialized knowledge. In addition, many experts tend to try to prove their talent and professional knowledge by using a hazy, mistified language, and complicate problems in areas where it is completely unnecessary. The expressions used in plans, require certain knowledge of economics at the outset, which political leaders often do not have.

There are also many examples of overconcentration of administrative activities on the part of the central planning bodies. While it may be permanent to centralize economic power either transitionally or on permanent basis, the result is that a highly important ratio of planning experts (of which there are few in the developing countries as it is) are concentrated in the planning offices and since the ministries and local bodies of self-government or other state bodies do little in the interests of planning, the planning offices also elaborate the sectoral and regional plans.

We have already mentioned that political intention is of fundamental importance in execution of plans. However, the success or failure of the plans also depends on cooperation with regard to this intention among the various links in the chain of administration during the course of execution. If planning is over-centralized then the interests of the lower level functionaries in execution of the plan will be more limited. This is also true in cases then laws prescribe cooperation for the lower bodies of administration. Generally there are two methods which can be used to change the situation. Generally there are two methods which can be used to change the situation. On the one hand these functionaries should be enabled to identify themselves with the plan to a greater extent by including them in preparations for the plan, and on the other, they must be made to understand the political and economic objectives of the plan. It seems from these conflicts that in a developing country the only plan which can count on comprehensive support from the political sphere and the only plan which is capable of mobilizing the people is the one which describes correct, general national objectives.

## B. The problems of the state sector

The experience of the socialist countries and those developing countries which have been most successful in approximating the objectives prescribed by their economic development plans have proven that the role of the state owned sector is of key importance from the point of view of execution of the plans. In most developing countries the state owned sector consists of infrastructural establishments, production enterprises and financial institutes. The laws of certain states (e.g. India) prescribe that in certain branches, all activities are to be completed by the state.

In many developing countries the development of the state owned sector received its incentives from sincere efforts to accelerate economic growth following World War II and from measures designed to protect the national economies from foreign capital (India, Egypt, Syria, Iraq, etc.). (The methods included nationalization, the establishment of state owned monopolies, etc.) However, in certain countries principally in Latin America, the state owned sector was formed substantially earlier, meaning in a period when the problem of economic growth was by no means cardinal. There are still many governments which are not principally development orientated and countries in which the state owned enterprises bear no relation to growth prescriptions. Traditional "state paternalism" rooted in feudal vestiges, e.g. in Latin America, has by no means disappeared fully. This means that planning does not become easier for having a base in the state owned sector, and the mechanism of plan execution does not improve.

For the governments of these developing countries the state owned sector is almost exclusively a source of income (sometimes serving as a source of personal income, and even of gaining personal wealth). In this they resemble the classic state monopolies.

The objective importance of the state owned enterprises in planning, is that through them it is possible to have the most direct effect on output, consumption and incomes.

This is the sector which the government is able to give direct instructions to, and to which it does so, depending on the legal positions of the state owned enterprises. In Egypt, for instance, following approval the plans for the state owned enterprises are compulsory and as such, are a part of the central budget. These enterprises pay in the majority of their incomes to the state budget and this means that they cannot invest without central approval, and without having the necessary capital made available to them. In several other developing countries the plans of the state owned enterprises are of an administrative nature and compulsory (while such prescriptions are not valid for the other sectors). But in many developing countries the situation is different.

In Argentina and Mexico the state enterprises operate independently from and even outside the plan, although in theory they wish to integrate their plans into the development programme.

In certain countries the state owned sector operates at a deficit. The reason for this is often related to the role of the state owned enterprises. In many countries, e.g. in India, Pakistan, etc. the state owned enterprises are supposed to help the private undertakings, by supplying cheap services, and raw materials, and by passing on their development achievements free of charge. This type of economic role is by no means limited to the infrastructure. In order to finance their deficits the state owned enterprises receive regular support (direct subsidies or special preferences) from the state budget, in official form, on the basis that the state budget cannot allow a state owned enterprise to go bankrupt under any circumstance (Iran, Nigeria, Pakistan, etc.).[8] In reality this subsidy is frequently an indirect support to the privately owned sector.

The role of the state owned sector in planning and in executing plans is weakened by other factors too. These include the very slow improvement in the training, selection and payment of employees in state owned enterprises which in many cases leads to the best manpower seeking employment in the local privately owned enterprises, or those operated by foreign capital.

On the basis of the foregoing the opinions of the majority of the population on the state owned enterprises are not always favourable. In many countries in which the people do not trust the government they justly view the state owned sector as the hotbed of corruption, the source of income to the bureaucratic elite, the "empire" of local chiefs and district military commanders.

Therefore, in itself the existence of the state owned sector is not an assurance that the given plan will actually be executed. Nevertheless, it is a condition and possibility of decisive importance in aiding execution of the plans. The budget, the size of the state development programmes, the dynamism of their execution, the level of supply for the necessary economic, financial, technical, commercial and managerial functions generally have a counter-effect on planning, and on the state institutions formed to execute the plans, and are essential features of plan execution.

## C. The Information System

One of the most important and most burning issues in the planning of the developing countries is the lack of the basic information needed for planning. Economic planning is intended to have an active effect on economic processes, to guide them in the desired direction, to accelerate them, and to aid economic growth. Economic life, even in the countries on lower levels of development, is a complicated system and in planning many types of information are needed from the most diverse fields of human social activity. Not only statistical data are needed with regard to, for instance, natural resources or the macro and micro-level interrelations of economic life (e.g. on the size and sources of investment and consumption, domestic production capacity, the flow of material resources and financial means etc.) for information of a "quality" nature is also needed on subjects such as customs of the population, preferences, reaction to certain measures, etc. Information on international interrelations is also highly essential (expected export-import possibilities) and international comparative data and time series are also needed. Information on the technique applied is also very important. The more comprehensive the plan, the more important precise knowledge of data becomes.

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[8] Organization and Administration of Public Enterprises, New York, 1968, U.N. 54–55 p.

In more than one developing country significant effort has been made to develop the information system. In certain cases the colonialists principally in the interests of taxation, already began to build up local statistical apparatus. However, in most of the developing countries there are serious shortcomings in the quantity, quality and time horizons of the basic data needed for planning.

Large masses of the population live under a system of economy in natural units and have no relation whatsoever with the market, or if they have it is little. Valuation of output not placed on the market often is completed through estimates, at prices valid for similar commodities on the market. The so-called organized or large scale sector, for which comprehensive statistics are available, provides only a tiny proportion of total output. Quantitative information on the much larger "unorganized" or "small scale" sector is rare and incomplete. The natural sector of the economy is large and covers not only an enormous ratio of food production, but of output and consumption of resources and services, and a large ratio of investments particularly in agriculture and housing construction. In the case of foods the supply appearing on the market is for the most part, not the result of market factors but of a force of power policy, under the pressure of land-owners, extortionists and their agents. In addition often the statistical system does not correspond to the requirements of planning. In general the national statistical offices play what is on the whole a subordinate role in the state apparatus, their workers are poorly paid and generally untrained. There are, of course, exceptions. In certain developing countries, e.g. in India an outstanding statistical system has been developed with highly qualified experts. The situation is similar in certain Latin American countries. But this is not the case in the majority of the developing countries. There are very few statistical offices with satisfactory financial means, equipment, machinery, etc. There are also shortcomings in lawmaking on data supply. In many cases the laws do not make statistical data services compulsory, or if they do it only extends to questions secondary from the point of view of economic growth and development. The various sectoral, branch, territorial and local statistical services are not coordinated in satisfactory manner and statistical programmes in uniform manner in nation-wide dimensions exist in very few countries only.

There are also problems regarding the use of statistical data. The bodies using the statistics do not know sufficiently often what data they need from the state apparatus and the private sector. Often they are incapable of using available data as aid in decision-making. Relationships between the planning offices and the statistical offices are generally exhausted in that the former request data from time to time for those plans which have already been elaborated. The relationships between the planning offices and the statistical offices do not have a regular basis, there is no regular flow of data which would make possible a revision and revaluation of plans on a periodical basis. The experience of the socialist countries in this respect indicates that planning and statistics must develop in interrelation with one another. In organizing execution of the plan a system of reports, corresponding to the "break-down" of the plans must also be formed. This system of reports could form the basis for ensuring the data necessary for elaborating the plan of the next period. In this way the plan provides incentives for the development of statistics too, in the corresponding branch of the economy.

In the developing countries the quality of the data is uneven too, depending on the sector to which it refers. Generally foreign trade statistics are the most precise. With regard to preciseness these are followed by demographic statistics, while statistics on home trade, construction, road building, and unemployment are particularly weak. When censuses or surveys are used for the basis of work, the continuity of data is generally non-existent. In general new categories are formed for industrial surveys instead of modernizing the old ones. Long delay is characteristic of processing the data. In most recent times the use of representative methods has helped the preciseness of data somewhat. A further shortcoming is the lack of regular and continuous time horizons, which would follow short term changes in economic life. Publication of statistical data requires a particularly long period of time.

## D. The Quality and Content of Plans

What is a plan good for? The answer to this is not all that simple. Replies of a general nature, such as "if it is realistic", "if it can be executed", if it is numerically "harmonic" are not sufficient criteria. It is obvious that the plan must be treated as a means for executing given economic policy objectives which not only aids realization of the objectives but also has an active counter-effect on the objectives themselves indicating their realisticness and indicating possible contradictions in time to be able to do something. The supreme prescriptions of the plan also serve as a system of indicators for economic management. This means that the condition for a good plan is an economic policy and development strategy of a correct, carefully thought out nature, describing the most general national objectives, taking the possibilities of the country into consideration and more than one alternative into account. The methods applied in planning are also extremely important from the point of view of the quality of the plan.

Therefore the national economic plan is a tool for the formulation and execution of a satisfactory comprehensive development policy and expresses this policy from the quantitative as well as from the qualitative side. As a result the failure of planning is also the failure to mark out effective political objectives and to carry them out. Planning, however, is in fact social technique and cannot replace development policy. This is a truth which is often forgotten by some. Preparation of a plan document cannot be a substitute for general objectives aimed at accelerating economic and social development. On the basis of economic policy the plan must be formed into a tool which actively influences the economy and achieves the desired changes. The objectives, which are marked out by the planners must have a satisfactory relationship with the objective conditions of the economy. In other words the objective economic situation always leads to the appearance of certain problems which must be faced and which to a certain extent determine the objectives too. The many-sided nature of objectives and the problems also requires that planning have a many-sided nature.

Analysis of the planning and plan execution practice of the developing countries proves that the following major factors play roles in those areas where planning was more or less successful:

(a) the state had satisfactory effective tools in economic life (state owned enterprises, financial institutions, etc.):

(b) planning received significant political support;

(c) it was possible to collect information on the country in question in a satisfactory quantity and quality;

(d) effective new administrative organizations were established and the work of existing ones was improved;

(e) the planners were capable of building up organic relations and a regular exchange of opinion between the state owned and private sector, and with various socio-political groups;

(f) good and rational plans were prepared.

The quality and content of the plans in the different developing countries are, however, different, and therefore it is very difficult to evaluate and compare them.

Waterston, the well-known bourgeois planning expert distinguished between three types of planning in his analysis of planning practice in the developing countries. They are as follows:

(a) installation-centric planning (where installations only are listed in the plan, independently of their interrelations and effects);

(b) integrated planning with respect to state-owned investments (containing the sources and effects of the capital needed for state sponsored investments);

(c) comprehensive national economic planning.

This grouping classifies plans from the point of view of the plan document. A further basis for classification might be the method of execution, and the corresponding roles of direct and indirect means during the course of execution.

Within the framework of this study, in connection with the quality of the plans, we have dealt principally with the so-called comprehensive plans which refer to the whole of a given national economy irrespectively of the concrete method of execution.

However, it is well known that the elaboration of the plan, as a document, embodies only one phase of planning. However, it must also take into consideration those measures and mechanisms which make it possible to execute the plan objectives, to revise the plan periodically, to control plan execution etc. In the developing world there are many plans which lack these features and are therefore no more than simple prognoses. Sometimes these plans call for significant changes in comparison to the past trend, and sometimes they also take into consideration the potential factors of limitation, but generally they remain no more than intention or desire.

There are many examples of the extent to which plans have broken away from reality. The practice of elaborating so-called "plans on paper" is particularly widespread on the African continent. A very great role in this is played by certain western advisors or groups of experts. The majority of the young African countries had to "come from very far" in forming an autonomous economic organization. In the first steps of their planning they were dependent on the aid of foreign advisors, in particular on advisors from the industrially developed capitalist countries. Many of these were rather irresponsible in that they ignored the given features of the country, its social problems and economic and administrative capacities, viewing planning as an "econometric exercise". In the 1960's, with the exception of the Republic of South Africa, all African countries had plans. Certain countries elaborated more than one plan for the same period of time. In certain cases, the predecessors to these "plans on paper" appeared in the colonial era. These so-called colonial development plans did not contain any sort of development strategy. They were prepared by colonial officials inexperienced in economic issues and their contents were determined fundamentally by the economic interests and raw material requirements of the colonialist country.

Following the gaining of their independence the African countries "produced" most of the plans of all the developing countries. In Africa too, the plan became the symbol of independent state existence. In many African countries the process of planning was similar. An expert from abroad or a group of experts arrived to prepare the plan. Their work consisted of elaborating a statistical or mathematical model, or placing the data collected or estimated for the given country into an existing model. They compiled several input-output tables reflecting the relations of the branches, constructed several equation systems, and presented a plan containing an internally balanced comprehensive capital-output ratio, marginal savings coefficients, import elasticity, spiced with production functions, and containing the deficit in investments and the foreign trade balance. The plan covered the whole of the economy, determined the annual growth rate, the break-down of investments by sector, expected trends in the payment balance, and contained the sum of necessary foreign aid. The plan was presented to the government and the experts departed. The governments either placed the plan in their archives or approved it formally, and one year later they called on a new group of experts to elaborate a new plan. In the majority of cases, this approximation was better for the given country from the point of view of economic development for, as the experience of certain countries proves, in those places where a plan like this was taken seriously and its execution was begun, serious failure was the result. These mathematically outstanding plans bore no relationship whatsoever to actual socio-economic conditions.[9] It was only by the late 1960's that certain African countries reached the point of stepping beyond the era of "plans on paper"; they were able to elaborate more serious, more realistic development programmes. Plans for the period of 1966–1970 and even more so for the first half of the 1970's were better than in former years in more than one African country, from the point of view of objectives, methods and ensuring the conditions for execution. The plans on paper were not only African features. There are also many plans on paper in numerous states in Latin America. Often the plan is an isolated programme of action for the different sectors. Sometimes it serves even more limited objectives, e.g. the rationalization of activities on the part of the administration (Columbia). Even so a continuously recurring question in many developing countries, particularly in Latin America, is whether or not to cease comprehensive general planning and to make greater efforts in the interests of several well planned special installations, to see to their realization. Similar proposals have been made in India.

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[9] The Economics of African Development, New York, 1967, pp. 209–221.

Different bourgeois schools have been developed regarding the planning theory of the developing countries.

The most accepted of these is G. Myrdal's approximation who, in the planning of the developing countries bases himself on the more general economic and political interrelations, and in this stands close to the Marxist concept on the issue. In his view in planning the attention of the developing countries must be turned to six closely related categories which are as follows:

1. Output and incomes.
2. The conditions for production.
3. Living standards.

(These are, according to Myrdal, the economic categories.)

4. Conduct related to work and life.
5. The institutions.

(These are the non-economic conditions.)

6. Politics, which in Myrdal's opinion is the variable containing the objectives and the tools.[10]

Myrdal criticizes the so-called model approximation described by Bent Hansen and Jan Tinbergen. The model approximation views the situation in the developing countries as a system of structural relations among different variables (economic conditions) which makes it possible for the governments to regulate certain areas by controlling other ones and in addition to prescribe certain changes in structural relations through direct state intervention.[11] Myrdal critizes the economic model approximation because it treats certain areas in isolation, while at the same time he also criticizes it because of the over-combining of categories. In the Myrdal approximation, the mutual relations, in his view, are so close that only the economic issues cannot be lifted out as independent variables for manipulation, ignoring the movement of other areas. In addition, in Myrdal's opinion, the Western concept of macro-economic categories is completely unrealistic under the dualistic relations in the economies of the developing countries. It is obvious that Myrdal does not fully reject the Hansen and Tinbergen approximation, but he does view it to be of limited importance. In this Myrdal is fully correct.

Bourgeois theories dealing with the planning of the developing countries in fact are endeavouring to provide a general framework for analyzing the issues, and to determine the mutual relations among the different factors including superior and subordinate relations (hierarchic theories). They deal to far less of an extent, however, with economic and political processes and the structural relations of the plan which would affect these, with the efficiency of the means for creating the effect, and with its contradictions. This approximation is, however, useful in systematizing the planning process, and in forming the internal logic of the plan, which is a very important task in the developing countries.

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[10] Myrdal, *op. cit.*, pp. 1859–1915.

[11] J. Tinbergen, Development Planning, Stockholm, 1967.

Development planning, however, should not be viewed as simply systematization and computer technology. Often the quantitative interactions of the plans, the quantitative determination of objectives and the description of resources, are identified with the whole of planning. While it is an extremely important and necessary element the plan must deal with the more comprehensive social and institutional conditions. The developing countries need efficient means in order to attain significant changes in their social and economic patterns and in their system of institutions. Actions of this nature which can often only be expressed in qualitative manner are often fundamental prerequisites for attaining development objectives. The plan is of no importance if it lacks a policy directed towards social changes such as a land reform, the redistribution of incomes, and satisfactory social discipline and this includes the formation of financial and budgetary discipline. In other words political will for development and the ability to exercise strong control on the activities of strategic importance to the economy are unavoidable in the qualitative evaluation of the plan.[12]

The problems are, therefore, significantly broader and deeper-reaching. In many cases, however, those documents which are called plans in the developing countries do not go much beyond quantitative expression of the most general economic policy objectives, in other words, that they would like to providė incentives for investments, that they would like to limit inflation, that they will control foreign currency incomes, that they will provide incentives to employment and will aid the growth of the gross national income.

Higher level complexity of plans in certain countries does not mean that any significant modification has taken place in former practice in which the large scale installations were simply listed by the plan (in other words, the plan was, in essence, an investment programme). This so-called installation centric planning resulted and results in serious shortcomings. The major problem is that often there is no harmony among the installations, their effects are contradictory and the governments endeavour only to create the capital needed for the investment. In Egypt they wished to double the national income in the 1960's. In the beginning they began to complete this plan tasks by seeking installations in the different branches which could most rapidly increase the national income. However, before long it became apparent that a nation-wide totalization of the installations proposed by the different branches would have an effect contradictory to the objectives of the plan.

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[12] Among the Marxist authors, analyzing the conditions for planning in the developing countries Józef Bognár's Economic Policy and Planning in Developing Countries (Budapest, 1968. Akadémia Publishing House) throws light on those economic, social and political interactions which must be synchronized as the prerequisite to successful planning. He particularly emphasizes the fact that in economic growth a "transitional period" lasting for several generations must be taken into account, and if synchronization is correct, economic development in this transitional period can be more rapid, and more even.

In the beginning certain developing countries marked out only general objectives on the GNP in their plans (e.g. Ceylon). This did not prove to be particularly successful. At the same time it also turned out that with a given social and economic pattern, the greater the detail with which they endeavoured to determine plan prescriptions, and the deeper they went, the more strongly the problems multiplied. Creation of harmony between quantities in value and quantities in kind proved to be a particularly serious problem in the plan. Experts in the majority of the developing countries planned exclusively in value categories in the beginning. But this proved to be insufficient, and resulted in the creation of serious disproportion and tension. It was proven that in a developing economy it is advantageous from other points of view too, to emphasize several essential objectives, given in physical units, in a clearly understandable manner. This includes, e.g. the quantity of wheat output, and several other fundamental consumer goods, the number of new homes to be constructed, the capacities of the power stations to be built, the number of those entering school, etc. Simple prescriptions of this nature are more effective in mobilizing the government institutions, the privately owned sector and the people than are abstract, although desirable objectives such as e.g. trends in investments of the rate of savings, the reduction of underemployment, etc. (Which of course does not mean that the plan should be reduced to simply a system of physical quantities.)

Taking the many-sided needs of the developing countries into consideration it is impossible to eliminate all conflict between objectives. However, it is essential to rapidly survey the conflicts so that satisfactory compromises can be developed. The possibility for selection generally does not appear in a manner whereby efforts are concentrated on only one or another field, but in seeking the optimum combination. It is sufficient to refer to the highly complex problem of employment. In most developing countries under-employment and unemployment reach a rate of 20–25 per cent of the total of working age. The problem of unemployment appears in two clearly distinct areas, although they are closely related to one another; in the urban and rural areas. Of the two there is no question that urban unemployment is more dramatic. The ratio of unemployment is higher in the urban than in the rural areas. Although there is significant under-employment in the urban areas, its weight is greater in the rural districts. In Latin America, for instance, one-third of the population was under-employed in the 1960's. This meant not only the squandering of human resources, but it was also one of the major sources of poverty among the rural population. In Brazil, e.g. in the 1960's the income of the poorest 20 per cent of the population was only one sixth of the nation-wide average. The majority lived in the rural areas. Rural under-employment is one of the reasons for the ever growing gap between rural and urban incomes. Urban unemployment and rural under-employment and unemployment are closely related. Under the conditions of dire poverty in the rural areas, and underemployment, the urban areas are an enormous attraction even if the people clearly know that they must wait several years for employment.

Experience to date and expected trends allow us to draw the conclusion that urban employment cannot grow sufficiently rapidly. It cannot absorb the millions migrating from the rural areas. In the 1960's factory industry output grew by 7 per cent annually in the developing countries and factory industry employment rose by 4 per cent, with the gap between the two indices growing. It is clear that in most of the developing countries the problem of providing jobs in both the rural and urban areas must be solved simultaneously, and it is impossible to concentrate on only the one or the other task. The development of rural small scale industry and handicrafts simultaneously with the urban factory industry, e.g., is a possible solution for many developing countries. In other areas, the problem can only be alleviated by organizing enormous rural public work projects.

In certain developing countries it has already been possible to use input-output analysis and mathematical models in planning, which made it possible to simulate the assumed changes in the economy, or the effects of actions. However, the use of mathematical means and models, on the one hand, due to the limited nature of data, and on the other, due to the fact that the narrow economic basis made the relations between the different variables unstable, did not prove to be an efficient means or even possible in many developing countries.

It has been proven in practice that the plan prepared using econometric models was less reliable than plans developed on the basis of "common sense", using logical considerations or prepared on the basis of consultations with representatives of the different strata and social groups, and the opinions derived thereof. In some cases the errors in the calculations completed on the basis of models were two to three times the size of those errors which occurred in the plans prepared using the "traditional" approximation.

This does not, of course, mean that under the conditions of the developing countries econometric models cannot be used. They have proven and are proving to be useful help in those developing countries which have more developed statistical systems, in measuring the effects of concrete measures or concept.

The use of more complicated methods, as already mentioned, is also made more difficult by the fact that the plans must be approved by political personalities who do not have any particularly great experience in economic issues. Often the plan must be compiled in a form containing hardly any quantitative interrelations for governments and state officials. Therefore, the regulations in the plan made public, which then have a certain power of force, often move among generalities only. This situation underlines the importance of increasing the level of economic information in the economies of the developing countries.

In the majority of the developing countries medium term plans running from 4 to 10 years are the kind generally prepared. Certain developing countries also prepare 15–20 year long term plans and forecasts.

The medium term plans (e.g. the five year plans) justly play a leading role, if these plans are formulated within the framework of a long term development strategy. In certain cases the long term plan contains a medium term plan period. On the basis of experience gained in the field of planning in the 1960's certain of the experts in the developing countries argue the wiseness of planning for a five year period and generally, for any fixed period (India). On the one hand they recognize the significant advantages of planning for a five year period from the beginning stages of planning. They also consider its simplicity to be highly advantageous for it provides incentives to the government to progress along a more clearly circumspectable road, and not to slip. However, they state that from the administrative point of view a five year period of this nature is supplementary rigidness in a system which in itself is rigid. The satisfactory, desired changes and improvements are not always executed in the case of unforeseen events, and the adaptation is leaving out the plan periods. Psychologically speaking, frequent modification of the plan in downward direction has a demoralizing effect. Certain experts in the developing countries, in part, based on the experience of the socialist countries, propose more flexible plans. One such proposal is the introduction of the "rolling plan" which would consist of the following: a plan for the current year which contains the budget and foreign exchange costs, a five year plan the objectives of which would be changed from year to year, and a perspective plan which would run for 10–15–20 years.

It is likely that a system of this nature, if it operates well would have many advantages over rigid planning, while at the same time, under the conditions of the developing countries it might also become a source of irresponsible economy. It might urge the governments to interpret their commitments to given economic policy objectives in a highly "liberal" manner.

In the developing countries too the plans are broken down in a number of directions, on the one hand in time, and on the other, according to sectors. Planning according to sectors, branches, and industrial branches, and the national "integrated" plan, with branch preferences and national priorities, is a matter of conflict in many developing countries, and has come to the forefront during the course of elaborating the plans, not only as a methodological issue, but as an essential economic policy problem too, particularly when it comes to planning investments.

Generally the development plans also contain the installations to be realized in the given period (investment objectives). The role of these latter is particularly important in the planning of the developing countries. This is not only due to the central role of state investment programmes but also to the fact that external aid is related to these objectives. The investment objectives are the sole element stipulated in the plans of the developing countries. In connection with other prescriptions it is very rare in the practice of the developing countries that the bodies responsible for the execution of the plans be precisely and concretely determined.

Another general problem in planning is that prescriptions for investments and output are more strongly elaborated than those for consumption and use of the resources produced. In the state sector they hardly deal with use of output by the new enterprises, particularly of the industrial enterprises. One of the consequences of this is e.g. the unused capacities of numerous state owned enterprises in India.

Another important problem is that in the majority of developing countries technical preparation of the plans requires a long period of time, 2–3 years in more than one case, whereas on the average experience has shown that a given government remains in power for fifty per cent of that time. Of course, it also requires a long period of time to compile five year plans in the socialist and the industrially developed capitalist countries. But the break-down of the time used differs. The majority of the time used in the developing countries is to compile the necessary data and to construct the desired model. After these data are collected and the model is finished, compiling the plan generally takes less time (sometimes no more than 2–3 months).

According to present practice in the developing countries the medium term plan generally contains analysis of the general position of economic life, and prescriptions for the development of the whole of the economy and the different sectors, as well as the most important social objectives. The plan prescribes those necessary changes which must be executed in the field of economic policy, as well as certain references to natural resources, and generally it deals separately with scientific research. It determines the prescriptions for state investments, and the objectives, and generally also states the external resources which would be needed to execute the given objectives, and the backing available.

Since the 1960's plans in several developing countries also contain conclusions on the measures they would consider wise in changing income distribution, for income redistribution. From the mid-1960's on tasks related to employment policy have appeared as emphasized objectives too.

In elaborating the plans, in connection with the prescriptions the extent to which they are capable of a satisfactory formulation of economic policy objectives to form a basis is highly important. If the development objectives are not also viewed as employment, productivity, vocational training objectives too, even if all other conditions were given there would be many problems regarding employment, qualifications, etc. It frequently happens that the development objectives are not in coordination with the demands of available qualified personnel and in particular with those of skilled manpower. Other subjects left out of the majority of plans are possibilities and problems related to the application of modern techniques and proposals in this respect are in fact generalities and not the result of deep-reaching analysis. It has not been possible to integrate scientific and technical development capacities into the plan in a satisfactory manner even in those developing countries which have such potential (e.g. India, Egypt, etc.). Serious problems also appear in certain aspects of the relationship between the plan and income policy.

In a good number of developing countries, even if the plans frequently contain general objectives for a more just distribution of incomes, they are rarely the basis for any course of action.

There are also noteworthy shortcomings in *the social aspects* of the plans. Despite the fact that they accept the general "integrated" concept of economic development, in other words, the close intertwinement of economic and social factors, these issues become secondary in the concrete prescriptions when the amount to be used for, for example, social services (education, housing, public health) must be determined, or when the amounts which should be devoted to infrastructural investments and the direct production activities of the economy must be determined. Since these matters are not decided on theoretical level the final prescriptions are often influenced by factors such as the weight of the different power groups and heads of the institutions in the state apparatus, or by momentary political requirements. Often the welfare aspects of the plan are narrowed down to "family planning", to aid birth control, and to certain health questions.

A task of key importance in the plans of the developing countries is satisfactory attention to *foreign economic relations*. The major problem is of course caused by the fact that in a short, 4–5 year period it is impossible to develop the production pattern to harmonize with trends in domestic and foreign demand. (This is a problem by no means specific to the developing countries.) In the majority of the developing countries the plan treats the problem of foreign economic relations as a matter of equilibrium in the payment balance over the period of the plan.

On the short term export incomes depend on expected trends in foreign demand for exportable commodities, and on domestic consumption of these articles. In many developing countries, particularly those with monocultural economies, export commodities are not consumed domestically to a great degree. Therefore, limiting domestic consumption of these commodities does not, in any case increase exportable surpluses. In some cases, despite the fact that the exported commodities are also consumed domestically, the conditions of external demand are such that it would be in vain to appear with larger inventories for export, because export incomes would not increase. There are also institutional limits on the extent to which it is possible to save during the course of a five year period.

Viewing the issue from the side of exports, there are generally two problems of prime concern: savings in the case of imported commodities (and this includes reducing imports for luxury purposes), or import substitution industrial development. With a given investment rate, their import content can in theory be modified by selecting sectors and production processes which require less imported and more domestic products, principally manpower. However, in the developing countries the possibilities for substitution of this nature are limited, particularly in industry, due to technical conditions. In the case of consumer resources, increasing savings can truly lead to a decline in imports. If, however, during the course of import substitution industrialization these imports were to, in part, be eliminated, then the larger general savings will not lead to a decline in the level of imports. If the output of domestic consumer resources depends on imported materials, then increasing savings will lead to a certain decline in imports, but it will also result in unused capacities in the affected branches of domestic industry (we have dealt with the problems of import substitution industrial development in another part of this article).

In the final analysis it is rarely possible to ensure that export incomes in the plan period be sufficient to finance the import requirements of the economy. It is almost a normal situation for export incomes to remain below the foreign exchange demands expected for the plan period. Therefore, the problem of planning is reduced to finding the necessary conditions to ensure:

1. That the export expectations forming the basis for the plan are fulfilled;
2. That import expenditure not be in excess of the planned level, that the composition of imports be in harmony with the priorities stipulated in the plan;
3. That capital flowing in from abroad be available either in the form of loans, or in other manners, in order to serve as backing for the expected shortage of foreign exchange. (Certain developing countries build 30–60 per cent of their investment programmes on this.)

On the longer term economic life and the production pattern can of course be formed in a manner enabling maintenance of equilibrium in the balance of trade with an increasing foreign trade volume. However, realization of an objective like this is extremely difficult even in the industrially developed capitalist countries. From time to time even these countries are forced to take an entire series of emergency measures to eliminate the deficit in the balance of payments. The situation is even more complicated in the developing countries. Manpower planning is difficult in all countries but it is particularly complex and unsolved in the developing ones. It is obvious that in this case, it is not a matter of something which can be solved within the framework of one or two medium term development plans, or a task which can be limited to an acceptable framework. A condition for the elimination of poverty and backwardness is that significant strata of the population be included in regular processes of "information procurement and information gaining". The more backward the society the more difficult the process. The development of education draws new, informed personalities to the stage of economic development. It breaks through tradition and contributes to increasing the productivity of the individual. The appointment of teams of experts of a satisfactory quantity and quality are also fundamental prerequisites for fulfilment of national economic development plans.

For this reason too, the development of public education in the majority of the developing countries is far more rapid than the accumulation of capital, or economic growth. However, in part, the expansion of education has created a mass of cultured unemployed. Technical development and the environment is incapable of absorbing talent and qualifications. In these societies, poor enough as they are investments for the development of education have in more than one case led to even greater social impoverishment. The efficiency of educational investments, in this way, will be extremely low for society.

The serious shortcomings of the educational system also reduce the efficiency of planning in this field. The education system inherited from the colonial era does not correspond to aiding economic development, to the demands of industrialization. This system served a very narrow minority and even in the bourgeois sense of the term it is not capable of satisfying the requirements of a modern nation.

However, in the vast majority of the developing countries the transformation in the educational system is not examined from the point of view of the necessary deep-reaching social and economic changes. There is no question of a cultural revolution or any other similar lunging change.[13]

[13] In this connection the expert report from the World Bank emphasizes that in the early 1970's still only 44 per cent of the young people of the corresponding age group were in school in the developing countries despite the fact that in the period of 1960–1967 the number of students in the schools of the developing countries had increased by 51 per cent, or to 212 million people. It sees the major problems in the following:

(a) the number of young people of school age is rising extremely rapidly;
(b) the quality of the educational institutions is deteriorating;
(c) the ratio of vocational trainees is very low;

In determining requirements generally they do not base themselves on the possibilities and development plans of the given country, but on the professional composition of the working populations of the developed capitalist countries. They view this as optimum. As a result, e.g. they neglect agriculture. They do not sufficiently take into consideration the fact that in the backward countries the city has a far stronger attraction for qualified manpower than in the developed countries. They neglect and ignore the "brain drain" problem, the attraction of other lands. As a result it has rarely been possible to integrate the educational system into the planned system of economic development. Therefore, there are serious disproportions in the educational system and policy of the developing countries.

There are disproportions between the composition of those finishing school and the professional structure required by development, on all levels from the rural schools to the universities. There are particularly few engineers, economists, agricultural engineers and teachers. There are not enough vocational schools and specialized secondary schools. The curricula follows the traditional structure. There are also serious disproportions within the framework of the educational system. Efforts are concentrated on the development of primary and university education. Development of the secondary school system is neglected. As a result there are insufficient teachers in the primary schools, too few students in the universities and not enough "secondary cadres".

Due to the lack of a carefully organized, comprehensive cultural policy, the limited material resources available for developing the educational network are spread too broadly. Not only does the "status quo" not change, but generally the situation even deteriorates. Extra-curricular education and adult education is almost completely neglected.

In this way the educational system and cultural policy fits into the general "trend" which is endeavouring to seek a solution to the burning problems of economic development without deep-reaching social reform.

In addition, public education in general is too academic in nature and in most cases the curricula comes from the developed countries. This is another reason why the students cannot receive qualifications corresponding to the requirements of economic development and job possibilities. In many countries where the number of students is high, there is an enormous ratio of drop-outs. They do not have satisfactory teachers or equipment. Another reason why the quality of the teachers is poor is because salaries are low. Higher education often suffers because it can only employ

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(d) the educational system is not related to demand for manpower;
(e) the costs of maintaining schools are rising;
(f) development resources available are limited.
(International Bank for Reconstruction and Development, Oct. 18, 1971)

professors in part-time jobs, and the number of students in the institutes of higher education is quite large.

### 3. Certain problems in executing the plans

What does plan execution mean under the conditions of the developing countries? It is impossible to give an unambiguous reply to this in the majority of the developing countries. In those places where the prescriptions have a "prophecy" nature the question is not even raised in this way. A mistaken prophecy is not identical with non-fulfilment of plans. Execution can only be a serious objective with plans harmonic even in internal structure. Plan execution does not mean the endeavour to mechanically fulfil the prescriptions appearing in the original plan document either, particularly not under the conditions of those developing countries where the original objectives and concepts often prove poor, or incorrect, and new, unforeseeable problems appear often. The major issue in executing plan is in fact the extent to which it has advanced development, in the direction of the objectives marked out and assumed to be correct.

### A. The tool house of plan execution

In the decisive majority of the developing countries plans cannot be executed through administrative measures under existing social and economic conditions. It has already been mentioned that in certain cases the government gives or can give direct instructions to state owned enterprises, and compel them to execute the plan. But this is not general practice either, and rather counts as the exception.

This means that the government must have a satisfactory store of tools available to make possible the realization of plan objectives.

It is not sufficient to recognize the fact that the development programme is the tool of action and not simply a diagnostic study or the expression of hopes. The plans cannot be executed if they do not contain the tools, that is, the clear interpretation of the necessary actions.

It would be difficult to create harmony in economic policy objectives, and to ensure their operation in identical direction even if we were to precisely know all the quantitative and qualitative interactions. This, however, is an impossible requirement even in the industrially developed countries under present day conditions, and on the present level of economic knowledge. The nature of reaction to the different incentives of limiting factors is not known and uncertainty is particularly great in those fields where the development process causes more rapid change in human conduct and generally in economic activity, and past experience is limited in value, if for no other reason, because such experience hardly exists. This is not a feature specific to the developing countries either. The experience of the industrially developed capitalist countries and the socialist countries are similar. However, the experience of the developing countries also proves that the governments generally are over-confident regarding the effects of one or another regulator. In practice these regulators more often prove to be insufficient than successful, and do not lead to the desired objectives. The reason for this is in part resistance on the part of the privately owned sector, and in part that in the economic environment the economic or non-economic contradictory factors have a far stronger reaction than assumed by the effects of the regulator (if it takes it into account at all). For this reason when it comes to definite economic policy objectives it is absolutely necessary for the regulators to take effects of different level and size into account.

The government needs satisfactory resources in executing development plans and investments. As a result in all taxation measures, whether direct or indirect, it is necessary to calculate the costs of the taxation too. The effects of the withdrawn incomes on economic growth must also be taken into account. Or, vice versa, the nature of the reaction of the privately owned sector or the population to a tax reduction must be examined. If the policy is to increase accumulation on the whole, a tax which will reduce the consumption of the population would seem wiser than one which limits the investments of the privately owned sector. However, it may occur that the objective of the taxation is precisely to limit the investments of the privately owned sector in order to strengthen the state owned ones. This requires taxation measures of a different nature.

There is almost continuous conflict in the developing countries regarding what is a desirable long term policy objective, and what is the necessary short term measure. Transitional disturbances in equilibrium often demand stabilization measures which are contradictory to the long term political objectives (e.g. stopping long term development investments because of current disturbances in the payment balance). This means that a satisfactory adjustment mechanism is needed in order to be able to maintain the basic principles of economic policy. Reaction to short term requirements cannot be avoided. The reaction is often forced by the fact that disturbances in equilibrium take place in the foreign economy, and this can undermine the long term objectives of the economy. This factor emphasizes the great importance of annual planning.

In the part dealing with economic policy we saw that the tools can be divided into two large groups: on the one hand ones which mean direct interference in the economy with direct effects on it, and on the other hand, those which provide incentives for limit decisions and particularly affect the privately owned sector. Almost all developing countries use all possible tools, and the difference lies in the intensity of use, the ratios among the measures, and efficiency of the state apparatus. However, the trend which can be observed is a rise in the importance of indirect factors in ratio with the development of the country.

Selection possibility among the tools of economic policy depend not only on the state and development of the economy, but also on the nature of the long term objectives.

A decisive, and specific problem in executing the plans in most of the developing countries is agriculture, in which the privately owned sector enjoys almost exclusive operation, and where natural unit economy is extremely frequent, meaning that it is inconceivably difficult to integrate into the national economic plan at the outset and even more complicated to ensure its execution. These problems appear most keenly in the most backward African countries, but they also exist in the more developed ones, such as e.g. the Egyptian Arab Republic. Since the weight of agriculture in economic life is extremely heavy in many respects it is a determining factor. Weaknesses in the plans in connection with agriculture limit possibilities in other areas at the outset.

The following major tools have been and are being used principally by the developing countries to execute the plans:

*State investments.* State production investments are the most direct means of the government in executing plans when the direct objective is to determine the size of national economic investments. Such investments can take place for strategic or political reasons because the government wants to keep certain tools in the state owned sector. State investments can also take place when the privately owned sector does not have the necessary specialized knowledge. Often the size of the investments makes the appearance of the state necessary, in cases when a satisfactory quantity of private capital is unavailable. The importance of the state investments is extremely great in the developing countries and in their social transformations.

*Direct control.* The quantitative, physical means of direct control are used in many developing countries to distribute limited resources. This is often an essential requirement in the developing countries in the interests of further progress for it prevents the squandering of resources, or their use for undesired goals which do not serve the interests of economic growth. The most frequent methods are the direct control of foreign exchange incomes and economy, price control, the direct state regulation of exports and imports, etc. The advantages and disadvantages of direct control have appeared in almost all developing countries which have used this method. One of the most serious problems is the lack of a mechanism which is able to apply direct control with satisfactory efficiency, in a reassuring manner. It is even difficult to form an objective criterion which would serve as a basis for the use of capital, under direct control. Considering the fact that demands are most versatile, they appear simultaneously from different sides of economic and social life. In practice there is great danger of the fact that instead of objective criterium, such as the major prescriptions of the plan, secondary, political, personal and possibly corruption factors will become the basis for decision.

*Indirect incentives and regulators.* The governments in most developing countries endeavour to see that their decisions operate in the privately owned sector in order to aid the development objectives of the plan, and the means used generally influence the profits and production conditions of the privately owned sector. Such tools provide incentives for certain activities and endeavour to limit others. Most frequently used are tax policy, tariff policy, credit policy, and the regulation of certain prices and wages. One part of these tools is strongly selective.

According to experience the efficiency of the indirect incentives and regulators depends in part on the efficiency of the market mechanism. The targets of the regulators must be ensured with calculation possibilities which enable them to precisely measure the effects of the regulators on their economic activities. This not only makes it necessary for them to become acquainted with the effects of discriminatory measures or incentives well in advance, but also for them to clearly understand the alternatives. However, these conditions exist rarely, and as a result these regulators prove to be very limited in value in attaining the desired objectives. In the majority of the developing countries the market mechanism is not sufficiently developed and the risk is too high, while the countries are poor in capital and the privately owned sector also lacks the capital to invest in the case of incentives. For this reason potential profits must be quite high in order to provide incentives for investment. In this respect marginal differences do not have any effect. The effects of the regulators on foreign capital is a complex question as in generally ensuring that foreign capital be willing to accept the plan objectives. There are also other factors, for instance, the simultaneous use of direct means, which influence the efficiency of the indirect regulators. Under the conditions of the developing countries a satisfactory, optimum combination of direct intervention and indirect means is one of the most difficult, most delicate tasks of economic policy and plan execution.

### B. Annual plans and the budget

From the point of view of executing the medium term plans, the annnal plans are extremely important. The importance of the annual plans stems directly from the medium term plan. First of all, the medium term plan does not contain all the prescriptions in as great detail as the annual plan. In addition, however, if fulfilment of the medium term plans are not tied to certain phases it is extremely difficult to determine success in fulfilment. The mechanical interpolation of intermediary years, as was applied by many developing countries, is unsatisfactory. Without annual planning it is impossible to interpret the medium term plan. Without it the medium term plan is dead.

As the practice of the developing countries has proven, it is not easy to create an organic relationship between the medium term and the annual plans.

In theory it is often accepted that the prescription of the medium terms must be used in evaluating the annual plans, but the annual plans must also be used continuously in order to report on the development plan. Amidst the dynamic conditions of the developing countries the plans too require continuous change and often significant modifications are also necessary. However, it rarely occurs that the prescriptions of the medium term plans, including execution, be re-examined during the course of annual planning. But the annual plans should be used for this dual objective.

In annual planning the best compromise between long term requirements and the continuously changing conditions within short term possibilities must be found. In this sense continuous and drastic deviations from the medium term plan are better than no medium term plan at all. At the same time if the medium term plan is rigidly adhered to, unforeseeable changes often create difficult situations. In the case of changes of this nature annual planning must endeavour to adjust the means of execution to the major development objectives to the greatest possible extent.

Another extreme in the plan execution practice of the developing countries is absolutization of the annual plan, and particularly of the budget. In several countries of South East Asia, e.g., the center of the plans is the state budget. This is related to the view that the state investments are the central means for executing the development plans. This means that in essence the budget becomes a development budget which covers all those state development expenditures which are to be viewed as investments or quasi-investments.

The importance of the budget in the developing countries is beyond debate. But planning consists of more than investments.

A high degree of concentration on the budget reflects in part the standpoint of the government that they do not want (perhaps they cannot) plan the national economy as a system while it makes it possible for them to avoid operative control and planning a related network of operation which are necessary to execute the plan. Plans of this nature do not devote much attention to home trade or foreign trade, to prices, etc. Since major attention is given to investments the state budget, which is the center of the plans, is oriented in fact to accounting state expenditure. If the plan is described only in the form of the state budget this does not ensure a rational basis for coordinating economic development measures. Therefore the budget cannot be mixed with the plan and cannot be substituted for it.

It should also be pointed out that in many countries significant analytical work is completed in elaborating the state budget, which in some cases also takes physical quantities into account and endeavours to coordinate economic policy too. Analytical work of this nature is often incomplete. However, in many developing countries the budgetary organ, whose task would be to execute the development budget, are far from completing this requirement. Not only is there a lack of budgetary discipline but often there is no continuity in the budget, in some countries its composition changes year to year. In many developing countries, in addition to the general weakness of the budgetary system it is principally the activities of the state enterprises which do not appear in the state budget in any form. (Often the nature of the items appearing in the budget are ones which mean support to the state enterprises.)

Control of plan execution is also a very important part of execution. Control in the developing countries is one of the weakest links in the planning chain. The major problem, if anything at all is done in this field, is that

—the control is not completed by bodies independent of the planning and financial bodies, but by the same bodies responsible for these;

—control is often extremely complex and limited principally to administrative issues, to maintaining discipline in receipts, and to other similar measures, and not to preventing the squandering of state funds.

The relationship between control bodies of this nature and law-making is also extremely lax, and it occurs most rarely that shortcomings regarding execution of the plan are taken before the law. Control is not sufficiently flexible, or sufficiently mobile.

The problem is also made more complex in that forming a satisfactory picture of the economy itself is difficult at the outset. The lack of data, the problems of cooperation between the state and privately owned sectors and the large physical distances of certain parts of the private sector from the centers etc. also makes control difficult.

### C. The problems of executing state investments

As already mentioned in the developing countries the most important tools of plans execution are the state investments. Their weight differs in the different countries but in many developing countries, in fact in the majority of them, they are in excess of half of total investments. There are also differences in the structure of state investments. In the majority of the developing countries over 50 per cent of the state investments are infrastructural in nature in the broader sense of the term. At the same time in certain countries the weight of production investments is as high as 60–70 per cent.

Due to their great importance the micro-economic aspects of executing state investments are also highly significant from the rational economic point of view.

The state investment programmes in the developing countries, in a similar manner to all other countries, are divided into individual investment projects. The phase of execution begins with approval of the given project and ends when it begins operation. Approval, including selection of the satisfactory project, and determining the order of investment projects, takes place before detailed plans are elaborated. Preparation of the detailed technical and economic documentation, and execution begin following it. In the majority of the developing countries there are very serious problems regarding the execution of state investments. The problems are the consequence of highly complex and different factors. In construction of investment projects by the state owned sector there are two shortcomings most frequently criticized: the longer time required for execution than the period planned and the significantly higher costs than the amount originally planned. Often the calculations are over-optimistic with the hidden intention that in this way the superior bodies will most willingly agree to beginning the investment. These problems also appear in the practice of state investments in the socialist countries, and in fact they are not unknown in the private enterprises of the industrially developed capitalist countries either. In the developing countries, where satisfactory technical planning conditions do not exist and economic and market analytical capabilities regarding the supply of necessary materials or price trends are often unsatisfactory lead to even sharper appearance of these problems. Sometimes external factors are responsible for the problems. These would include changes in prices on external markets, or denial of credit or a loan which had been expected, etc. However, in the developing countries the decisive shortcomings and narrow cross sections have developed because of a lack of professional knowledge, obsolete organizational methods, bureauracy, inertia, disturbances in various areas, or in some cases, conscious sabotage. As a result the incomplete investments increase far more rapidly than the new investments.

The first and most frequent problem in the execution of investments is the lack of coordination. In the state sector either a ministry or a given development firm, state enterprise, more than one organization is responsible for a given investment. The services of foreign enterprises must also frequently be used. In most cases local private enterprises or other state bodies also participate in execution. Therefore coordination is a task of key importance and this is particularly true for the multi-purpose, complex projects, such as e.g. the Aswan complex in Egypt or the Damodar Valley system in India. In this field there are generally two methods applied. Either a separate firm is established for execution, or a council of execution for the given project (a project board) is established, and the chief engineer leading the execution is directly responsible to it. It is obvious that it is difficult to handle the large and complex task of project execution even with a good organization, and this is particularly true if execution takes place according to the practice of traditional state public work, as it generally does in the developing countries. In India, for instance, even in the late 1960's execution contracts were prepared under a law approved in 1929 which is far from being in harmony with present day requirements. In most Latin American countries there are no satisfactory organizations for executing and controlling execution. In the beginning phase the Ministry for Finance or a development institute is responsible, while in the concluding phase the project itself completes control but there is nothing between the two.

The problems in most cases begin with the technical designing, which is often poor in quality. Execution of the project often begins without the finished technical designs being available. As a result there are frequent changes in the designs during the phase of execution and there is much extra originally unplanned work. It often happens that necessary infrastructural, manpower and other conditions are forgotten. The shortage of building materials also contributes to delays.

In many countries the executors are private firms. According to the law in cases like this the responsible government bodies generally call for tenders. However, the government bodies cannot make objective decisions for either there are too few applicants or they do not have the satisfactory expert knowledge to judge the tenders. Corruption is also an extremely frequent phenomenon.[14]

In this field it is impossible to obtain precise, comparative data. Instead, only isolated examples are available, but they do indicate the general situation. In India, for instance, in the five years between 1961 and 1965 of 228 larger scale state investments only 24 were completed on time, while the rest were finished with delay. In 13 cases the delay was in excess of two years in comparison to the period planned, and in 134 cases the delay was greater than 6 months. Of the 228 projects mentioned, budgets were not significantly overstepped in 66, while they were in the other. In 93 cases the excess costs were over 40 per cent. Similar problems and ratios are also characteristic of other developing countries.

It is clear that this significantly reduces the efficiency of state investments, and hinders execution of the plans.

### D. The mechanisms to bridge unforeseeable problems

Often the developing countries build their plans on over-optimistic assumptions. However, even in cases when the plan is more or less realistic and precise, numerous unforeseeable difficulties can arise during the course of execution and they can endanger the whole project. (Here we are referring exclusively to economic issues.)

In the late 1960's Sussex University in Britain organized a scientific conference entiled "Crisis in Planning". With regard to this title one of the participants in the conference from a developing country stated that the problem was rather "Planning in Crisis" than "Crisis in Planning" for this was one of the major problems of the developing countries. Critical situations can occur in developing economies for many reasons and the difficulties and tensions are continuous concomitants of planning.

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[14] Indian Builder, New Delhi, April 1965, p. 30–31.

One such group of difficulties is internal (poor yields, losses of income, price rises, narrow cross sections in the material fields due to unsatisfactory balance in the plans, natural catastrophes, etc.). Another highly important internal problem is the lack of continuity in economic policy, which does not necessarily mean a change in government. A given policy may also change as the result of domestic or international pressure, or because of internal resistance to certain priorities. Such resistance may continue to exist following the decisions and may endeavour to have the given objectives changed.

However, external problems appearing in plan execution play a greater role considering that the developing countries are strongly dependent on the import of machinery, installations and know-how. (The external factors can also be different, e.g. changes in export or import prices which can reduce incomes from exports or increase the price of imports, the loss of other sources, e.g. the decline in the import of capital, changes in the conduct of creditors, etc.).

Of course no country (not even the industrially developed states) is capable of completely eliminating or neutralizing the effects of unforeseeable factors, particularly political factors, on their economies. There are factors of uncertainty in all economic activities, and many countries have sufficient reserves to counter-balance them.

In connection with the developing countries it is realistic to build a mechanism into execution which reduces the unfavourable effects of these factors. In this connection the requirements are as follows:

1. In order to reduce the effects of unforeseeable difficulties in the programme of state investment projects, particularly in those countries where there is little experience in plan execution, they must be made more flexible. General preparations must be done in such a manner that certain projects can be postponed until the conditions for execution exist, while it should be possible to slow down, or stop others. This is why it is necessary for the medium term plans to determine the order or importance of the different projects from the point of view of the plan objectives.
2. In forming the medium term plans those items in state expenditure which can be reduced must be determined in advance, so that sums be available for pumping into the development budget in the case of unforeseeable losses in income. But it is not sufficient to form funds in money for material balance must also be ensured, and this includes the necessary foreign exchange in the case of such changes.
3. Due to the above it is wise to prepare so-called "shadow budgets", special budgetary variations, in annual break-downs in order to determine what are the changes which will cause the least damage to the plan in the

case of an economic emergency, while at the same time, what are the new projects which can be begun if resources were to increase.

4. The special importance of incomes of foreign origin makes maximum coordination of domestic, international and foreign economies essential, particularly in the case of emergency measures. This makes necessary not only a high level of concentration of economy with foreign means of payment, but numerous other political and administrative measures as well: When and where is it essential to execute projects with high import content? If it is a case like this, if it is essential to execute a given plan objective from the economic or political point of view, it is wise to ensure a certain source of foreign income, e.g. a loan, to ensure the continuous flow of equipment and know-how.

A special reserve fund of foreign exchange must be formed to make it possible to transitionally bridge sudden gaps, losses of income. The size of such funds must be determined as a function of the import requirements for the projects most important from the point of view of the plan of the given country.

Since the various types of projects are influenced in different ways by different difficulties (e.g. agricultural projects, rural development, and road construction are generally less import intensive), it is necessary to be able to ensure a traditional regrouping of manpower to such projects in the case of large scale international crisis, so that this manpower (or certain material) is not left unused.

They must be prepared to find satisfactory domestic or international sources for substitution which are at least capable of counter-balancing part of the loss. In states of emergency of this nature the means of international organizations or inter-state transfers of capital can also be used.

In practice it has rarely been possible for the developing countries to build up such a bumper mechanism or in particular to form reserves. Generally the unforeseeable problems and the disturbances they caused have led to stopping execution of the plans and giving up the objectives. In cases like this they were incapable of ensuring the continuity of their economic objectives.

## E. Plan execution and firms in foreign ownership

Even today no small part of the activities of the multinational corporations are concentrated on the countries of the "Third World". Many such undertakings have remained from the colonial era, and are concentrated principally on extraction of raw materials and a certain degree of processing. In the latter half of the 1960's 50 per cent of North American private capital and 49–50 per cent of British capital were invested in the developing countries in "mining and metallurgy" and the oil industry. Additional, by no means, small sums have been concentrated on the agricultural sector. Even since they have gained their independence there has been a rise, though smaller in degree than in the earlier period, in the volume of investments by foreign monopolies in the developing countries.

The "global" or "international" super monopolies in the Third World are facing partners whose positions are far weaker than their own. Their presence is the clearest representation of the international system of monopoly capital and imperialist exploitation.

Historical experience has proven that the export of capital creates different relations between the developed exporter of capital and the developed importing countries than between the developed exporter of capital and the economically backward importer of capital, although in both cases it is a question of fundamentally identical conditions of exploitation. However, the concrete form of appearance of exploitation is different in those countries where foreign capital fully controls economic life, than where the weight of foreign capital in the economy is comparatively little.

In the first group the so-called "assimilation" of foreign capital is far more difficult, and in some cases, impossible. Hilferding pointed out this phenomenon in connection with the economically backward European countries: "In large economic areas where capitalism developed rapidly in objective manner as the result of domestic conditions, there was a rapid national assimilation of foreign capital. In other words, Germany rapidly assimilated Belgian and French capital . . . . However in the small economic areas, this assimilation meets great difficulty, since the formation of the domestic capitalist class takes place far more slowly, and with greater difficulty.

This . . . became impossible as soon as the nature of capital export changed and the capitalist classes of the large economic areas (i.e. the leading imperialist countries—M.S.) no longer endeavoured to establish branches of industry producing consumer goods in the foreign countries, but rather to ensure raw materials for their increasingly developing means of production industries. For instance, the ore and coal mines in the Iberian peninsula went into the hands of foreign capital. These countries were deprived of their raw materials for English, German and French industry, at a time when they otherwise would have begun to develop their most important modern branch of industry, their iron industry. Their capitalist development, and with that their political and financial development was stopped at the very beginning. Since economically they became the taxpayers for foreign capital, they also became secondary states politically."[15]

It is obvious that the international capitalist exploitation operating through the conditions caused by the export of capital has the most serious effects on the economies and societies of the backward countries.

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[15] R. Hilferding: A fináncótke. (Finance Capital), Budapest, 1959, Közgazdaságiés Jogi Kiadó, pp. 437–438.

In the past the economic conquest of the developing countries went concomitant with colonial political dependency. In this way specific forms of imperialist exploitation developed.

The most significant feature of colonial exploitation was that political rule made it possible for the "mother country" to manage and exploit the economies of the colonies in a full and exclusive, monopolistic manner. The free flow of capital, protected by force (military), tariff preferences for the colonialist country, the monopolization of foreign trade and control of financial affairs, the land concessions, research, the exploitation of natural resources and permits to freely carry out other economic activities granted to the colonialists and colonial companies, the dual exploitation of the colonial peoples, the high taxes, the sums of which were wholly or partly transferred to the mother country, were the major means through which the colonialists gained their extra profits.

In essence the situation today is similar in the economically backward, dependent semi-colonies where the imperialist monopolies enjoy strong preferences won through force, blackmail, or "more refined, discreet" means, by establishing various puppet governments, or by bribing them etc. However, these prerogatives are far less stable for even in the systems in which the state apparatus operates in closest cooperation with the imperialist powers, they are not in the hands of foreign capital to the same degree as in the colonial era. They are forced to share with the local leading strata to a greater extent than before, taking the measures of local lawmaking into consideration. In many cases while the lawmaking of the new states regulates the activities of the foreign corporations, at the same time they endeavour to return the investment of capital with various tax and other incentives. These incentives supplement those advantages which the special conditions of the Third World provide for increasing the profits of the multinational corporations, such as the large quantities of available raw materials, cheap manpower, and a full monopoly position in the market of certain manufactured goods, which make it possible for them to keep their prices high. This is why profits are higher for foreign enterprises in developing countries. In 1950 the average profit rate for foreign investments by American corporations was 14.96 (it was 13.6 for undertakings in the developed capitalist countries, and 16.3 in the developing countries).

Fifteen years later the profit rate for foreign undertakings declined to 11.8 per cent (8.7 per cent for the developed capitalist countries and 15.4 per cent for the developing countries).[16] Within this, however, the profits of the oil companies in the Middle East rose from 32.4 to 41.7 per cent. The profit rate of British corporations in the developing countries is

[16] Survey of Current Business, Washington, September 1965.

also about double that realized in the developed capitalist countries.

In certain developing countries the governments make significant effort to include the foreign private companies in plan execution. They base themselves on the fact that the foreign corporations operate in economic life as "development mediators" in transplanting new technique, and technical and management knowledge, that they increase employment and contribute to general economic development. Through their greater experience and broader scale international ties they can help to increase exports. All this is true to a certain extent. But the questions are to what extent, at what price, and for whose good.

The majority of the developing countries gained unfavourable past experience with regard to the multinational corporations in two particular fields: one was that the foreign super monopolies, to put it mildly, were "not neutral in the country politically speaking" and to this very day, where they have had the means and opportunity, they have endeavoured to "solve" local conflicts with open political pressure, and in some cases, with military intervention. In the first half of the 20th century the imperialist powers often used the policy of direct military intervention to protect the foreign positions of the monopolies even in the case of developing countries which were not colonies. The infamous declaration of former American president Coolidge that e.g. the foreign property of the citizens was part of the wealth of the American nation and in this way, fell under the protection of the state, is still considered valid in the United States.

But the economic aspects of the question are important. In the colonial era the foreign corporations exporting capital concentrated principally on the extraction of mineral resources and exporting them, and on the development of certain public works needed for this.

The rule of foreign monopoly capital prevented the colonial countries from developing their forces of production, and creating autonomous national economies.

In the past the capitalist economy developing under colonial conditions was not built on local requirements or the national market, and in essence it hardly took the demand of the local population into account. Its fundamental objective was to ensure the raw materials needed for the centers of world capitalism, the "mother countries", for their own extended reproduction at prices cheaper than in the mother country. For this reason foreign monopoly capital flowed principally into those branches (minerals, output of agricultural products) which were produced principally for the leading imperialist powers, and only an insignificant part went into fields producing for local demand. The foreign capital investments caused the colonial countries to specialize in producing one or two products needed by the monopolies.

The one-sided specialization resulted in monocultural economic patterns which made autonomous economic development impossible, and indirectly assumed the dependency of the economic life of the country in question on the imperialist powers.

The realization of the one or few products produced in these colonialist countries did not depend on the internal market, or the size of the domestic market, but on the demands of foreign countries and in particular of the imperialist mother countries for these products. The realization of the national income is a fundamental prerequisite for reproduction. Since the monopolies determined wages and purchasing prices as well, as a result they decided the size of the ratio of the national income which was to remain in the given colonial country. This was regulated by the fact that as a result of the one-sided development the colonial countries were forced to buy from abroad, and their purchases were supplied by these same corporations at their own prices. The foreign monopolies did nothing to see that the more modern techniques used in their own firms spread throughout the country. Often this question did not arise at all since the local population dealt with primitive land cultivation, and the possibly modern extraction branches were a foreign body in the "technical desert". These features still determine the activities of the majority of the foreign corporations operating in the developing countries. Not only do they make planning and plan execution more difficult by this, but they also reduce the part of the national income which would be used for accumulation. On this basis several developing countries have applied a radical policy against the foreign monopolies. The majority of the new states, of which this is not characteristic, have endeavoured to limit the investments of the foreign corporations in one way or another, since they gained independence. The limits have taken on different forms. The most important, and the forms applied in many developing countries are the following: limiting or prohibiting land ownership by foreigners, regulating the extraction of natural resources by foreign firms (making concession conditions stricter), laws which prescribe the branches which foreign capital can enter, and the ratio which the foreign firms are compelled to include local undertakings, and that management of the company must remain in the hands of the citizens of the country receiving the capital. National planning makes it necessary for limited resources to be concentrated on the priorities accepted. Foreign exchange limits have been introduced which limit the foreign corporation in its repatriation of profits. New labour laws, strict state control on exports and imports, high taxes, etc. are also often related to plan objectives. Often foreign private capital heatedly resists these measures.

The measures of limitation used by the developing countries, sometimes mixed with the threat of nationalization have sharply increased risks for the foreign corporations and have contributed to a slow-down in the growth of investments by foreign monopolies in the developing countries.

Despite the limitations, it is particularly the large foreign corporations which can rarely be convinced to accept the national plan objectives. These corporations operate under the instructions of their centers particularly in the "traditional" that is the extraction branches. In this case it is often necessary to adjust the national plans to the foreign corporations.

In the latter half of the 1960's 56 per cent of the investments made by American monopolies in the developing countries were concentrated on "mining and metallurgy" and the oil industry (49–50 per cent in 1960). Almost two-thirds of British investments in the developing countries are in raw material extraction and plantations. In addition the lion's share of the profits of the firms in foreign ownership which is the large ratio of the fruit of economic development is taken out of the country. For instance in 1960–1965 alone the super monopolies of the United States withdraw over nine thousand million dollars of profits from the developing countries, as compared to three thousand million dollars worth of new investments of capital.[17]

It is becoming increasingly frequent in the processing industry that certain foreign corporations are willing to "integrate" to the framework of the national plan. They are more willing to subordinate themselves to the limits than are those corporations operating in the extraction branches, and are more willing to place their investments in those branches of industry favoured by the plan. Sometimes this takes place under the effects of competition among the international corporations. This is the only way they can gain on their competitors in the markets of the developing countries. This is particularly true in the case of the small or medium sized foreign corporations.

The firm in foreign ownership which can directly attain modern technique and capital, with qualified management, even if it does subordinate itself to the national plan, is in a highly strong position against the local government, and can gain higher profits than national capital or enterprises in state ownership. This is not only expressed in the declared higher profit rate. The companies in foreign ownership are capable of organizing their activities in such a way that the majority of the profits of commodities produced in one country be realized in other countries, and possibly in other products, for they plan for the entire international system (the oil companies are typical examples of this). This is why they rarely dodge taxes or simply "avoid" taxation as one part of national capital does. They can hide the majority of their incomes in exports or patent agreements. In addition, e.g. in contrast with the possibilities of domestic capital, in many countries of the developing world foreign capital enjoys guarantees in the case of currency devaluation, inconvertibility, nationalization or war. These guarantees are generally presented to the monopoly centers by the government responsible on the site of the unit, in order to provide incentives for international operation.

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[17] idem.

## 4. General Evaluation

A question frequently asked in connection with the developing countries is whether those efforts made in the interests of planning have or have not accelerated economic development and made it more efficient. Only concrete analysis of the different individual cases can give a reply to this. There are no general criteria with which it is possible to measure success. Often those results attained in increasing the GNP were far more the effects of external changes, the success of exports, and not the consequences of a change in economic pattern, or improvement in it. When satisfactory statistical data is unavailable it is extremely difficult to say what took place under the effect of the plan and what would have taken place in the economy; anyway, in fact, it is difficult to determine what took place in the economy at all. In this respect reports on the plan can rarely be considered reliable. (Often there are no reports on the plan, or the ones which exist are full of gaps.)

There can be no question that planning in certain countries has led to certain results. In countries such as India, Egypt, Tanzania, Algeria, Syria, etc., it has unquestionably played a role in helping economic growth, in accelerating it, although the plans had to be modified frequently. Planning also resulted in contributing to the development of economic research, and to helping state economic activities to become more organized and coordinated. It contributed to realizing certain institutional reforms such as e.g. tax collection, the mobilization of the capital saved and a better integration of foreign aid and domestic resources. These results of planning efforts must be taken into consideration in evaluating the past period of the developing countries. However, on the whole the first ten to fifteen years of planning was rather an era of study and experimentation. Most of the developing countries proved incapable of maintaining the development prescribed in the plans for a lasting period of time and of attaining the objectives marked out in them. As was already mentioned their programmes have often proven to be "plans on paper" and lacked the realistic possibilities for execution. They prescribed many objectives, and these often bore no relationship to carefully thought out development strategies. The planners most often endeavoured to rather avoid the problems instead of coming to grips with them, and as a result the plan was not a serious analytical means which could actively affect the economy. Often the plan directives were built around foreign aid to an exaggerated extent. If the aid or the loans did not "arrive" only 40–50 per cent of the investment objectives of the plans were realized. Certain objectives proved to be failures because agriculture did not realize the hopes placed in it while in other cases there was a *lack of foreign exchange*. Endeavours for short term application proved insufficient, and often the originally planned long term directives had to be given up.

When the plans were begun the peoples of the developing countries awaited economic development with great expectations and high hopes. However, the failures led to disillusionment in the plan, and to planning in general.[18] But this does not mean the failure of planning in general, but that in concrete cases of the economic policy. The policy which was incapable or unwilling to execute the necessary social, economic and administrative reforms, and viewed the plan as at most a "fashion" of a means of political propaganda. It also has to be understood that in the beginning of planning there was enthusiasm on the objective or subjective sides of planning. Hopes were awoken for the short term solution to tasks which only generations of tense, self-sacrificial work are capable of solving together with the sincere commitment of the government. In certain cases the failure of the plans also reflects problems which the economies of the developing countries were incapable of and could not even be capable of solving. Not only were these unforeseen domestic economic problems but also extra-ordinary political problems, coup d'etats, etc. There is also no doubt that international political events also intervened and prevented execution of the plans. For instance, Nigeria's economic development was significantly slowed down by the Biafran civil war. The Israeli aggression had a highly detrimental effect on the economic lives of many Arab countries. The war with Pakistan, and the enormous masses of refugees forced India to undertake an enormous regrouping of its material means, and this affected the entire system of planning. *The currency crises of the capitalist world economy also made it more difficult to execute plans in many developing countries.*

However, the first 10–15 years of planning in the "Third World" also proved that the acceleration of economic growth, and the alleviation of the accumulated social and economic problems require greater and more sincere effort.

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[18] In the late 1960's following "two decades during which planning by which is meant here government planning for economic and social development—gained virtually universal acceptance in the less developed countries; questions are being heard about its usefulness for accelerating the rate of growth. . . . Those who oppose government intervention in the economy, in renewing or increasing their attacks on development planning, have not failed to point to the poor record. To this defenders of the accepted system of planning reply that what is at fault is not the conventional planning approach but the failure of governments to follow the precepts and prescriptions laid down by planners." This is the way this problem has been described by e.g. Albert Waterston, the well known planning expert of the World Bank, in his article "An Operational Approach to Development Planning" (Finance and Development, Vol. 6, No. 4, 1969, p. 38).

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# THE MANAGED TRADE IN THE 1980s—IMPLICATIONS OF THE TEXTILE ARRANGEMENTS

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The world trading system is now cumulating difficulties. The world economy is in the midst of what has been discussed as "the worst economic situation since the 1930s". From 1980 to 81, world output increased by only 1 per cent and in 1982 and 83, it fell below the 1981 level. For quite some time, the world economy has been slowing down and the present crisis cannot be explained away as a "cyclical phenomenon". Between 1963 and 73, world output grew at average annual rate of 6 per cent, but only half as fast in 1974–81. Since 1970 the rate of increase in world output has—steadily declined and came to a virtual halt in 1981–82 (see Table 1).

TABLE 1

GROWTH OF WORLD OUTPUT, 1965–1981

(percentage)

| Region | 1965–73 | 1974–80 | 1981 (a) |
|---|---|---|---|
| | (Annual Aver.) | | |
| World | 5.4 | 3.7 | 0.9 |
| Developed market-economy countries | 4.9 | 3.3 | 1.3 |
| Developing countries | 6.6 | 5.3 | —0.8 |
| Traditional oil exporters | 7.8 | 5.4 | —6.4 |
| Non-oil exporting countries | 6.0 | 5.3 | 1.5 |
| Fast-growing exporters | 8.6 | 6.1 | —1.5 |
| Socialist countries | 6.8 | 4.2 | 1.9 |

Source: UNCTAD, *Handbook of International Trade and Development Supplement*, 1981.

(a) percentage growth changes during the year.

Another alarming trend has been the tendency for developed countries to adopt more inward-looking policies. The proportion of transactions conducted under all kinds of non-tariff restraints has been growing. It increased by at least 5 percentage points between 1974 and 1980 and

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according to various estimates, this proportion is now between 40 and 48 p.c. of world trade.

## Present State of Affairs

The sectoral unemployment further intensified protection in many countries, threatening to undermine almost 40 years of international negotiations to create a more open and equitable world trading system. The most important feature of the present situation is that while in the inter-war period, quantitative restrictions were wide-spread, but more or less random, today by contrast, they cluster in particular areas. "The measures themselves, their methods of administration and articulation of both day-to-day and longer-term trade policy in the areas, form coherent system of industrial protection".[1]

TABLE 2

SHARES OF IMPORTS FROM DEVELOPING COUNTRIES IN THE INDUSTRIAL COUNTRIES' APPARENT CONSUMPTION OF TEXTILES AND TEXTILE PRODUCTS, 1970–79

| ISIC code | | Developing country market penetration | | |
|---|---|---|---|---|
| | | 1979 (percentage) | Growth rate 1970–1979 (percentage) | Total apparent consumption (billion dollars) |
| 32 | Clothing, textiles and leather | 9.6 | 14.8 | n.a. |
| 3211–1 | Cotton fabrics | 10.7 | 8.3 | 12.3 |
| 3214–1 | Knotted carpets | 29.2 | 4.4 | 3.1 |
| 3215 | Cordage rope and twine | 13.1 | 7.0 | 1.8 |
| 3220 | Wearing apparel | 14.1 | 17.6 | 84.0 |
| 3220–2 | Women's, girls' and infants' outwear | 10.5 | 22.8 | 30.0 |
| 3220–3 | Underwear | 16.9 | 14.2 | 11.9 |
| 3220–4 | Leather apparel | 38.7 | 17.7 | 4.0 |
| 3220–5 | Headgear | 12.7 | 19.0 | 0.9 |
| 3220–6 | Knitted apparel | 36.5 | 10.7 | 7.0 |

Source: Helen Huges and Jean Waelbrock, "Can Developing country exports keep growing in the 1980s?" *The World Economy* (*June 1981*), Tables 2 and 3.

In the decade of the 1970s, each unit increase of GDP in developed countries gave rise to an increase of only 1.45 units of imports, while in the 1980s, the corresponding increase in imports was 1.25 units only. But in the 1960s, the corresponding increase in imports was 1.75 units. In real terms, world imports grew at annual rate of 8 per cent in the 1960s, while in the 70s the rate fell to 5.5 per cent.[2]

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[1] Jan Tumlir, International Economic Order—Can the trend be reversed? *World Economy*, March 1982.

The imports of manufactures by developed countries from the LDCs rose in 1980 by about 15 per cent in volume, a doubling of the rate of increase in 1975. But the growth in developed countries' imports of textiles and clothing was much less rapid. The estimated growth in imports of textiles and clothing from LDCs in volume terms was 11 per cent in 1981–82 following near stagnation in the preceding year.[3]

Now with the sole exception of tropical products, each of the distinct areas of foreign trade (agriculture, textiles and clothing, steel, sȳnthetic fibres and other petro-chemicals and three sectors of transport equipment), has now a trade policy system of its own. General trade policy has virtually ceased to exist.

Now world trade in textiles accounts for 7 per cent of total world trade and 12 per cent of world trade in manufactures. For the LDCs, textiles are an important part of their exports. The export of textiles is now 30 per cent of total export of manufactures from non-oil LDCs and 32 per cent of their manufactures exports to the developed countries. This segment of trade is not covered by the GATT rules; for this trade, there is a set of rules called the arrangement regarding trade in textiles or the Multifibre Arrangement (MFA).

The signatures to this arrangement account for over 90 per cent of world trade in textile, and clothing valued at over 100 billion dollars today. This arrangement was conceived in the 1960s at a time of general buoyancy and also responded to various structural problems that were plaguing the textiles and clothing industries. Overtime, the system of restrictions on exports from the LDCs by commodity source has become increasingly restrictive and complex.

The major advocate of the arrangement was the USA and it was also the main force behind liberalization of world trade under the GATT. In the early 1970s, the US reached agreement with the major suppliers in the control of textile exports and items made of man-made fibres and wool. As these restrictions were not justified within the LTA, the US was willing to make concessions in return for the legitimization of restrictions on a wider range of textile items.

Twenty years later, the arrangement still exists and is far more restrictive than ever in terms of country and product-coverage. The MFAI along with new protocol of 1981 is in operation from January 1982 and will continue till 31st July 1986. The statement of objectives is full of noble sentiments that the objectives were "the expansion of trade and production of barriers to such trade and progressive liberalization of world trade in textile products, while at the same time, ensuring the orderly and equitable development of this trade and avoidance of disruptive effects in individual markets".

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[2] *Protectionism, Trade relations and Structural adjustment*, Report by the UNCTAD, Jan. 83, TU-274, p. 3.

[3] *International Trade*, 1982–83, GATT, Geneva.

The protocol of 1977, extending MFAI, qualified its provisions and a provision was made for "reasonable departures" from MFAI, with the mutual agreement of the importing and exporting countries. Since the word "reasonable" was not further elaborated or specified, the extent of departure was not put under any limit.

In case of MFAIII, the protocol of 1981 has done away with "reasonable departures" clause and provisions have been made about the base level, growth rate and flexibility. A reference is also made to the possibility of mutually-acceptable solutions being found with the goodwill of "certain exporting participants, now predominant in the exporting of textile products in all three fibres covered by the Arrangement: cotton, wool and man-made fibre". Another "principal aim shall be to further economic and social development of LDCs". Hence the minimum growth rates for quotas, the flexibility provisions and the rules, procedures and implementing arrangements were more favourable than were corresponding aspects of the LTA. The most important provisions were that increases in quotas past the first year should not be less than 6 per cent per year, except in exceptional cases and the establishment of the textile surveillance body.

## Case for Trade Restrictions

The protectionist measures in textiles were there in the inter-war period also and the problems in the textile and clothing sector have been present in times of boom and recession. Really these arrangements were aimed at stimulating trade in textiles and clothing, without disrupting the industrial structures of developed countries; one of the objective of MFA was to help in the economic development of the LDCs and also a substantial increase in their earnings from trade in textiles and clothing.

Now there emerges another major issue that confronts the world trading system. The governments are increasingly prepared to tolerate, on a long-term basis, the existence of internationally uncompetitive activities. Main reason for these restrictions is the continuing problem of unemployment in these sectors. But it is strongly disputed whether joblessness in textile sector is due to imports from the LDCs.

Several recent studies have pointed out that displacement of labour has resulted more from changes in productivity due to various technical advances.[4] Initially these restrictions were applied to allow a time to the developed countries for adjustment and these measures were limited to cotton textiles. The suggestion was made that the share of the domestic market of developed countries should be guaranteed against competition from the LDCs.

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[4] See here A. O. Krueger, 'Impact of Foreign Trade on Employment in US industry', in Black and Hindley, *Current Issue in Commercial Policy and Diplomacy*, 1984, V Cable, "British Protection and LDC Imports", *ODI Review*, London, No. 2, 1977.

In this sense, the MFA is a very interesting case study. What is involved here is abandonment of the principle of comparative advantage. The recent studies of Hufbauer and Lary also showed the characteristics of labour-intensity in the textiles industry as compared to other activities and also the corresponding adaptation of these technical requirements to the availability of factors in the LDCs.[5] Moreover lower wages are not new phenomena peculiar to LDCs only. In case of textiles, the LDCs have access to same technologies as the developed countries as well as access to low-wage level.

Now it is not necessary for the developed countries to prove that textile imports from the LDCs are injurious to their industry; such restrictions can be imposed against imports from any particular country. Hence doing something about employment interest of LDCs is important to interest of developed countries. Now tariffs on textiles and clothing imports from LDCs are two to three times higher than those on manufactured goods and increase on finished items having higher value-added.

The MFA is the only inter-governmental arrangement where importing countries undertake a commitment vis-a-vis exporters to facilitate structural change by adopting policies to phase out uncompetitive lines of production. Also the complex system of quotas is more restrictive than it appears, because these quotas are never fully realised. Hence during ten years since MFA was set up, world trade in textiles in clothing has expanded by 11 per cent only which is less than average growth rate of world trade for this period.[6] The apprehension that free trade in textiles and clothing would put manufactures in developed countries out of business is also without any basis. The net exporters of textiles are South-Korea, Thailand, Hongkong and India, followed by Brazil, Pakistan, Turkey and Egypt.

Hence despite apparent comparative advantage of the LDCs, import penetration has been fairly modest. Table 2 shows that in 1979, imports from developing countries took 9.6% of the developed countries' total market for clothing and textiles combined. The clothing categories are those in which import penetration has been growing most rapidly. By 1979, import penetration by the LDCs had reached 14.1 p.c. in industrial countries' markets. Indeed on a still more disaggregated basis, penetration can be higher still.[7]

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[5] See G. C. Hufbauer in R. Vernon (Ed.), *The Technology Factor in International Trade*, NBER, 1970, *HB Lery, Ir[illegible] of Manufactures in Developed Countries*, NBER, New York, 1968.

[6] *The Economist*, July 28, 1984.

[7] Martin Wolf in WR, Cline, *Trade Policy in the 1980*, MIT Press, Cambridge, 1983, p. 460.

## The Recent Trends in World Trade

We find that for the large developed countries, volume of trade was modest in relation to output; so trade could have only modest effects on clothing output of the US and EEC. While the LDCs generally have substantial surpluses in relation to output, their magnitude is small in relation to output of industrial countries. Brazil, Honkong, India, South Korea, and Taiwan together had gross output in 1976 equal to about 40 per cent of that of the USA over the EEC and their combined gross exports were only about 15 per cent of US or EEC output.[8]

But the range of LDCs' comparative advantage is quite restricted. In 1978, they accounted for only 42 per cent of market economies' clothing exports and 22 per cent of textiles. The LDCs did best in the most labour-intensive and simple parts of textiles and clothing, while industrial countries dominated exports of knitted fabrics, man-made fibre, yarns and fabrics, carpets (other than knotted), coated textiles, machinery and man-made fibres. The dividing line of comparative advantage goes through the textite categories, with clothing, cotton, and jute textiles and knotted carpets on the LDCs' side and synthetic and woollen textiles knitted fabrics etc. on the industrial countries' side.[9]

Recently GATT secretariat brought out a study on textile and clothing industries in the world; this was meant to help the work of the contracting parties as per decision on textiles taken at the November 1982 Ministerial meeting.[10] Trade in textiles 1982 was $ 52 billion and that of clothing $ 41 billion. Together, they accounted for 9 per cent of world trade in manufactures and for 5 per cent of world merchandise trade.

Table 3 shows that the share of textiles has declined for both country groups in the post-war years, but between the two groups, it has remained almost constant at 3 : 1, making textile exports much more important for the LDCs.

TABLE 3

SHARE OF TEXTILES AND CLOTHING IN EXPORTS OF MANUFACTURES

(percentage)

| Country Group | 1955 | 1963 | 1973 | 1982 |
|---|---|---|---|---|
| *Textiles* Industrialized countries | 10.3 | 7.8 | 5.8 | 3.8 |
| Developing countries | 34.3 | 30.1 | 18.8 | 10.6 |
| *Clothing* Industrialized countries | 1.6 | 2.2 | 2.3 | 1.9 |
| Developing countries | 4.0 | 7.8 | 14.2 | 13.6 |

*Source*: *Textiles and Clothing in the World Economy*, *GATT*, July 1984.

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[8] Martin Wolf, *op. cit.*, p. 464.

[9] Martin Wolf, *op. cit.*, p. 464.

[10] GATT, *Textiles and Clothing in the World Economy*, July 1984.

As for the origin of imports into industrial countries, between 1963 and 1982, their intra-trade in textiles declined from 80 to 71 per cent. The 9 point gain was divided between the LDCs and the Socialist block countries. The tendency of developed countries to run a deficit in clothing with the LDCs is partly redressed by textile exports. The Communist countries also run a deficit with LDCs in clothing, but this is more than made up by textiles. The latest trend is that the penetration of the EEC market by the LDCs has been replaced since 1976 by a shift in imports from other industrial countries.

For a long time, the US has incurred trade deficit in both industries; its deficit in clothing has deteriorated and textiles have done much better.

## Problems of Adjustment

There is an urgent need now for remedial adjustment and adapation to imports from the LDCs. We should underline an important fact that textiles are stepping stone to the industrialization of the LDCs; here textile industry plays a crucial role. But clothing is a late comer to world trade scene. This industry catered for the domestic market only till the late 1950s. Both these industries are characterized by an above average level of government intervention.

The GATT report found that the MFA causes significant trade diversion and works against the exporting LDCs. Then economic inefficiency and sub-optimal resource allocation are built into the MFA. We should also remember that LDCs' markets have lately become more important as outlets for manufactured items of developed countries. It is obvious that import demand of these countries can continue only as long as their exports grow. The recent Brandt Commission report put it so well "the great challenge for the North is to cope with the difficulties of adjustment, so that the world trade can expand; to see its trade with the South not as a threat, but as an opportunity; to see it not only as part of the problem, but as part of the solution. In the end the failure of mature industrial economies, economies to adjust to the realities of international competitiveness may deprive them of their prosperity and impose far costlier and more disruptive adjustment than those which their current measures of protection attempt to postpone."[12]

In case of several LDCs, the exports-oriented industrial production is in the critical stages of development. Due to their poor resource endowments, it is very difficult for the LDCs to diversify towards the middle and upper end of the technology scale. It is just possible that several fundamental issues will not be resolved in the near future. So long as protected industries are kept humming, fresh resources continue to support

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[11] GATT, 1984, *op. cit.*

[12] *North-South: A Programme for Survival*, Brandt Report, London, 1980, p. 70.

them which is a permanent loss. Hence the social cost of protection in the form of misallocation of resources turns out to be quite steep.[13] Some other examples here are steel and auto industries.

Now will the adjustment process strengthen the textile industries in developed countries to face competitive markets? Moreover will restrictions on imports help industry in the developed countries to face competitive market? We do not get here clear answers from the past experience?

If a comparison is made of the ratios of imports and exports to consumption of cotton and synthetic textiles, the industrial countries lost their comparative advantage in the late 1970s. Shepherd (1981) calculated these ratios and found that the loss is clear in case of France and Britain. Until MFA II, there was continuous rise in the ratios of import and export to consumption and it was observed in most of the developed countries throughout the 1960s and 1970s. The MFA II caused a reduction towards the end of 1970s in the growth of penetration of low-cost imports from the LDCs.[14]

As the Brandt Commission put it, restructuring is a continuous process in an efficient economy through which more productive activities replace less productive ones—as in leather goods, shoes, textiles or ships whose production has increasingly moved to the third world.[15]

Moreover having agreed to avoid "serious damage" it is necessary to prove the existence of damage. The Annexe part I of the MFA observed "the existence of damage shall be determined on basis of an examination of the appropriate factors having a bearing on the evolution of the state of industry in question such as: turn over, market share, profits, export performance, employment, volume of disruptive and other imports, production, utilization of capacity productivity and investment. There are two factors that describe the symptoms of damage to production interest; profits and employment.

## Impact of Trade Restrictions

It is useful to see how slowly restricted imports have grown since 1976, that was the starting point for several bilateral agreements under MFA II. These restrictions directly affect the geographic origin of imports of the LDCs. But it is not possible to quantify this because comparison with non-MFA world is not possible.

The effect of restrictions imposed over the years has been to create a marked break in the emerging pattern of trade with the LDCs and significant divergence of trade was also observed. The GATT study also suggested that the MFA system assumes that quotas are going to be filled. Study

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[13] See G. Curzon et al., *MFA for Ever*, Trade Policy Research Center, London, 1981.

[14] Shepherd, *Textile Industry Adjustment in the LDCs*, Trade Policy Research Center, London, 1981, p. 12.

[15] Brandt Commission Report, *op. cit.*, p. 35.

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of 21 LDCs showed that out of 70 cases observed, in only two were the quotas fully utilised. The utilisation showed a wide spread from 1.9 per cent (Yugoslavia—US) to 106% per cent (Pakistan—US).

While efforts have been made in developed countries to adjust but with varying degree of success e.g. Switzerland and West-Germany. We also find in some countries a tendency to shelter behind the protection provided by the MFA. It is also suggested that the MFA increased a number of producers in the trade. There is also the opposite view that the MFA tries to freeze the existing trade pattern to the detriment of potential new entrants to the market. Here we do not get clear answer from the facts.

Hence as long as the sectoral view dominates trade policy of major countries, only a progressive tightening of the existing systems of industrial protection can be expected, a development that will further multiply economic difficulties for countries concerned.[16]

## Cost of Protection and Adjustment

It is also suggested that due to up-grading of quality, various restrictions of the 1970s have seriously limited the LDCs' ability to expand the purchasing power of their exports. A simple way to get evidence here is to deflate the value of LDCs' exports of textiles and clothing to industrial countries by the unit value index of the latter's exports of manufactures to LDCs. On this basis, the purchasing power of LDCs' textile exports to industrial countries rose by 12.8 per cent between 1976 and 1980 (a compound rate of 4.5 per cent a year).[17]

The MFA is also accused of creating a psychosis of protection in the world economy. It is difficult to test this proposition but it remains well within the realm of possibility. It is true that since the signing of STA in 1961, not many other industries have sought MFA like arrangements, but restrictions have proliferated to other industries like shoes, steel and autos in the form of voluntary restrictions.[18]

Keesing and Wolf calculated the real growth rate of imports of textiles and clothing from LDCs under different protectionist arrangements.[19] They deflated the growth rates of imports of textiles and clothing into western Europe and North America for the following periods: 1963–73, 1973–76 and 1976–78. The deflator used was the unit price index of manufactured exports so that the numbers show the real growth of LDCs' earnings of textiles and clothing exports in terms of industrial goods bought in return.

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[16] J. Tumlir, *op. cit.*, p. 31.

[17] Martin Wolf, *op. cit.*, p. 470.

[18] Dilip K. Das Dismantling the Multifibre Arrangement, *Journal of World Trade Law*, Feb. 1985, p. 78.

[19] Keesing, D. B. and M. Wolf, "Questions on International Trade in Textiles and Clothing, "*The World Economy*", Volume 4, No. 1 (1981).

TABLE 4
REAL GROWTH OF IMPORTS OF CLOTHING AND TEXTILES FROM DEVELOPING TO INDUSTRIALIZED COUNTRIES

| | Per cent per annum | | |
|---|---|---|---|
| | 1963–73 | 1973–76 | 1976–78 |
| Clothing | 21.1 (15.3) | 14.4 (5.6) | 4.6 (6.0) |
| Textiles | 6.9 (8.0) | −0.4 (−3.6) | 2.5 (4.1) |

N.B. Figures in parentheses stand for the world averages.
*Source*: Keesing and Wolf (1981).

In the first period, the growth rate of earnings from clothing was very high, above the world average. In the second period, the clothing trade recorded a slow-down due to 1974–75 recession. The third period was very poor due to increasing restrictions and stringent quotas.

## The Future of MFA and the Policy Options

The textile arrangements have always been considered as being temporary. But the text is silent on practical ways of reaching long-run goal of ending these costly restrictions. Moreover several important new openings of restrictions could be suggested here.

(i) A decline in the rate of growth of per capita consumption in textiles and clothing in importing countries is referred to as "an element that may be relevant to the recurrence of exacerbation of situation of market disruption."

(ii) The socalled dominant suppliers are obliged to find and contribute to "mutually acceptable solutions to particular problems relating to particularly large restraint levels" (para 6). The 'minimum' flexibility provisions of MFA can be violated in agreement with so-called dominant suppliers where a growth rate lower than the norm of 6 per cent growth has been justified (para 9).

(iii) Bilateral agreements can include an "anti-surge" mechanism to limit full utilisation of previously underutilised restraint levels. As Hong Kong and South Korea fill their quotas, it is clear that this mechanism is likely to affect other suppliers more (para 10).[20]

Now several possibilities for future development of trade in textiles and clothing could be suggested. The ideal one is that the international community could agree that there is no need for any restrictions which would not only mean reverting to pre-MFA days, but to pre-STA days.

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[20] Martin Wolf, *op. cit.*, p. 478.

But it is not possible to visualise a restraint-free textile trading system in the near future.

Second possibility could be a reversion to the original MFA that was a more balanced instrument. I am sure several LDCs would like to see a return to the MFA as it was negotiated in 1973.

A third possibility could be a prolongation of extended MFA with the protocol, including provision for reasonable departure. The LDCs may not like it, in view of extensive use of departures in base levels, growth rates and flexibility from the norms of MFA by a number of importing countries.[21]

Still I remain hopeful. I could say with John Tumlir that "a few more years of stagnation, with unemployment in the range of 5–10 per cent may make our governments more inclined to explore new ideas on how to restart stalled economies."[22] May be that the LDCs still have a strong interest in an open world trading system.

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[21] L. Athulathmudali, Forthcoming Negotiations on the Multi-fibre Arrangement, *The World Economy*, June 1980, p. 10.

[22] John Tumlir, *op. cit.*, p. 40.

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*BOOK REVIEW*

# INTERNATIONAL TRADE POLICY

*By* DAVID GREENAWAY; *published by* Macmillan, 1983; pp. 235.

*Reviewed by* RAMESHWAR TANDON, Institute for Social and Economic Change, Bangalore–560 072.

In this work, Greenaway gives a comprehensive review of tariff and non-tariff interventions and also stresses the institutional framework within which tariffs have been gradually replaced by non-tariff instruments as tools of commercial policy.

While international specialization has been increasing, now the welfare of most countries is becoming increasingly linked to the foreign trade sector. So countries have become more open. Part I reviews a number of explanations of the emergence of foreign trade flows. In the classical (Labour productivity) and neo-classical (Factor endowment) explanations of trade, the influence of demand is assumed away. This did not mean that the role of demand in establishing relative prices was ignored. It was the explicit recognition of demand factor in the work of Mill and Marshall which helped in the development of trade offer curve.

In part II the focus is on tariff interventions. The analysis of positive effects of tariffs is followed by a review of some of the arguments for tariff intervention. The author suggests that the theory of optimal intervention prescribes a hierarchy of policy instruments, given the first best assumptions. The theory of optimal intervention is founded on the Paretian principle of welfare improvement, i.e., if a given change results in one person being made better off, while on one else is made worse off, the change can be thought of as desirable.

Part III looks at new protectionism. The author starts by surveying the conditions for international exchange and their welfare implications and also looks at the economic effects of tariffs on domestic markets and income distribution. The most common trade restricting non-tariff barriers are the qualitative restrictions of one form or another. While the quotas are administratively more straightforward to operate than tariffs, there is more scope for abuse also.

The author also reviews the concept of effective tariff protection and its measurement. The last two chapters here deal with tariff liberalization. The GATT articles do provide for introduction of restraints under certain circumstances. The level of incidence appears to be higher in those sectors which are traditionally protected such as agriculture. Also the incidence of NTBS tends to be heaviest in those markets where the LDCs are

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becoming important exporters. Greenaway also looks at the dynamics of comparative advantage as also the rise of structural unemployment. A detailed analysis of the system of restrictions on trade in textiles is also provided.

The growth of new protectionism is also viewed by the author as defensive reaction to adjustment pressures. Hence it is wrong to regard adjustment problems as being exclusively trade-related. Some like Krause regard entire phenomenon of new protectionism as being natural extension of the welfare state to markets for traded goods. Really estimating the effects of trade interventions on employment is an extension of identifying aggregate welfare effects. Here one has first to predict the effects of given policy changes on net imports.

Various 'ex post' studies also revealed that the main source of employment changes in import-competing sectors is not the changes in imports 'per se', but the impact which changes in imports have on productivity and the effect which productivity change has on employment.

## ADJUSTMENT, CONDITIONALITY AND INTERNATIONAL FINANCING

*Edited by* JOAQUIU MUNS; *published by* International Monetary Fund, 1984; pp. 214.

*Reviewed by* RAMESHWAR TANDON, Institute for Social and Economic Change, Bangalore–560 072.

This book is based on papers and comments presented at the seminar on the role of IMF in the adjustment process held in Vina del Mar, Chile, in April 1983. Muns points out several notable characteristics of the 1970s: extreme fluctuations in rates of growth, but with slower overall growth than that of post-war period, the continuation of inflationary pressures, the appearance of severe current account imbalances in balance of payments.

The increasing debt service of the LDCs made them very sensitive to any continuous worsening in their export markets. During 1982–83, the level of foreign reserves of several debtor countries reached minimum levels. The reaction of private lenders was to reduce drastically net flow of new funds.

In her paper, Linda Koenig stressed the general environment of slow growth in the developed countries. Really world economy in 1982 was characterised by very weak economic activity and rising unemployment and for the first time since 1975, a shrinkage in the volume of world trade. While the recovery of industrial countries assumes a recovery of real output growth rate to 2 p.c. in 1983, that also assumes a rise in economic growth of 2.4 p.c. for non-oil LDCs. This is extremely inadequate. As Koenig underlined, in case of LDCs, there were decreases in total output and several changes in various elements of balance of payments. Also there were decreases in capital flows and exports that led to a marked reduction in imports and a loss of about $ 11 billion in regions' international reserves.

We can say that increase in the importance of oil factor has contributed to all the problems facing the world economy. The fact remains that the increasing net investments can still be considered a necessary conditon for growth and development. Hence, the role of external financing will continue to be significant.

In Bilson's paper, emphasis was on the abruptness and intensity of adjustment in 1982 in response to crisis in the level of indebtedness in Latin America. He developed the asset market approach to balance of payments. Really the transmission of financial disturbances causes instability in a small country. Due to all these difficulties, Bilson seeks a procedure that will allow small countries to insulate their exchange rates as much as possible from outside disturbances.

Bilson also held that through proper management of asset portfolios of central banks, two objectives could be achieved: a greater stability in exchange rate and a lower cost of indebtedness. Here we come up to practical difficulties of allowing variables such as exchange rates and money supply to be dependent upon the adjustment aimed at equalizing central bank assets and liabilities. It may still be the case that a system that ties the appreciation of the currency to reserve currency interest rate results in an unacceptable level of exchange rate instability.

Robichek in his paper looks at the legal basis for the Fund's conditionality. There was unanimous acceptance of the Fund's legal right to establish some conditionality. Moreover, the Fund's limited resources and the nature of magnitudes it deals with make greater flexibility in its programmes impracticable.

The IMF has been experimenting with formulas for automatic adjustment of balance of payments performance tests to protect members from unforeseen contingencies. We can say that the performance of the Fund would be strengthened by a widening of its capital base.

Lofer stressed that existence of price distortions was one common problem in countries which took up programmes with the Fund. Really these pricing policies had been generally successful, when accompanied by various prescribed policies. While the objectives of these policies were sound, the particular applications in case of Argentina, Chile, Mexico led to overvaluation of exchange rate and had to be abandoned. In all the cases, a severe devaluation also occurred. We find wide agreement about various negative effects, particularly exchange and interest rates have had upon economies of Latin America.

Blejer and Tanzi review various sources of deficit financing and effects of expansionary fiscal policies on balance of payments. One conclusion here is that the balance of payments had generally improved under those programmes whose fiscal targets had been met.

S. Edwards integrated a dynamic analysis of demand for reserves with that of conditions of equilibrium in the monetary sector of the economy and held that the reserve level was a function of the effort to eliminate discrepancies between desired and actual reserves and also of excess supply of monthly. In cases of excessive borrowing where there was a parallel process of financial liberalization. Edwards suggested the need to improve domestic system, of banking supervision and also to determine an optimum level of external indebtedness for private sector based on the creation of a tax on foreign lending operations. The experience of Latin America showed the failure of savings to respond favourably to increasing level of external debt.

In the last paper, J. Guenther suggested that in the 1970s, international capital flows played very crucial role in the growth of world economy. Then there was sharp increase in interest rate also. Now we all agree that the growth in debt must be slowed down to more moderate level. Some countries in Latin America and Africa need even a slower rise in debt than 7 p.c. unless they could contract an increased portion on concessional terms.

What are the prospects of achieving a reduction of combined deficits of the LDCs. Maybe that some reduction is possible, but an adjustment of this size is not possible. Hence general conditions in world economy and domestic policies are crucial to determine whether 7 p.c. rate of growth of stock of debt suggested by Guenther is feasible.

# International Conference of Economists

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   [2] Samuelson, P.: *Foundations of Economic Analysis*, Harvard University Press, Cambridge, Mass., 1947, pp. 79–80.

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